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FINAL

ways Master Plan



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Prepared for:

City of Lincoln

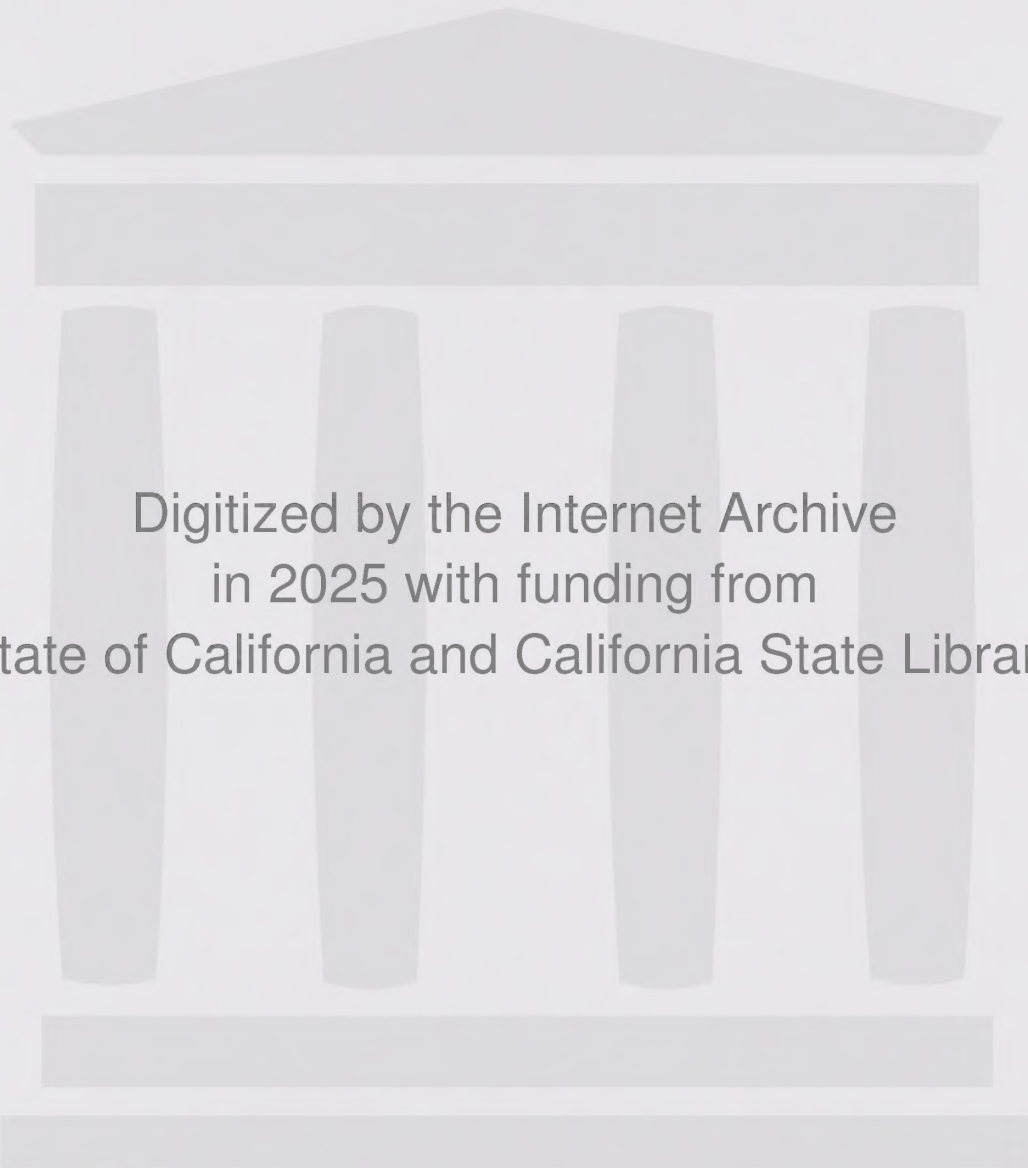
Prepared by:



Fehr & Peers Associates, Inc.
Transportation Consultants



OCTOBER 2001



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I. INTRODUCTION

The City of Lincoln Bikeway Master Plan (BMP) was prepared by Fehr & Peers Associates, Inc. under contract to the City of Lincoln, Community Development Department. It provides a blueprint for developing a bikeway system that includes both on-street and off-street facilities as well as support facilities and programs for the City.

This draft report represents existing and past information about bike planning in the City as well as new information developed solely for this project. The report contains information on bikeway design guidelines, goals and policies that guided the planning effort, the proposed system map of bikeways and support facilities, and cost estimates for completing the system.

STUDY AREA

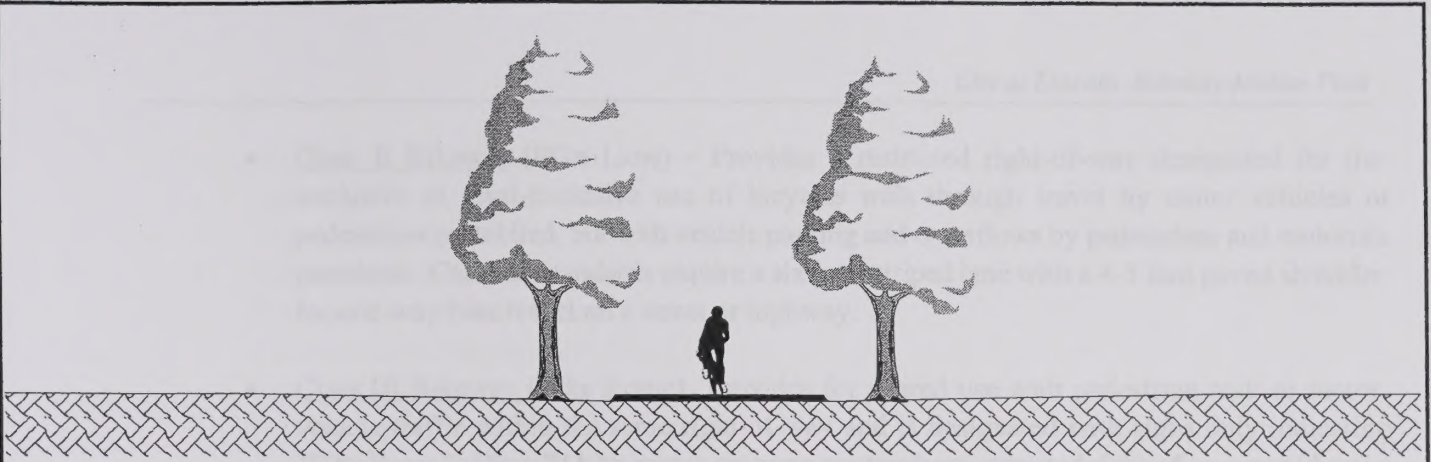
The City of Lincoln is located on the eastern edge of the Sacramento Valley floor at the base of the Sierra Nevada foothills. It is located on State Route 65 and State Route 193 approximately 10 miles northeast of Interstate 80 and 26 miles from the Sacramento International Airport. The City consists of approximately 12,123 acres. The study area for the City of Lincoln Bikeway Master Plan includes the city limits, plus the land outside of the City known as their "sphere of influence." The study area is generally described as being bordered by Athens Road on the south, Sierra College on the east, Fiddymont Road and Airport Road on the west, and Virginiatown Road-SR65-West Wise Road on the north.

PLANNING AND DESIGN STANDARDS

Bikeway planning and design in California rely on the guidelines and design standards established by the California Department of Transportation (Caltrans) as documented in the Chapter 1000: Bikeway Planning and Design contained in the Highway Design Manual, Fifth Edition, California Department of Transportation, February 1, 2001. This chapter of the design manual was the basis for standards of the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA).

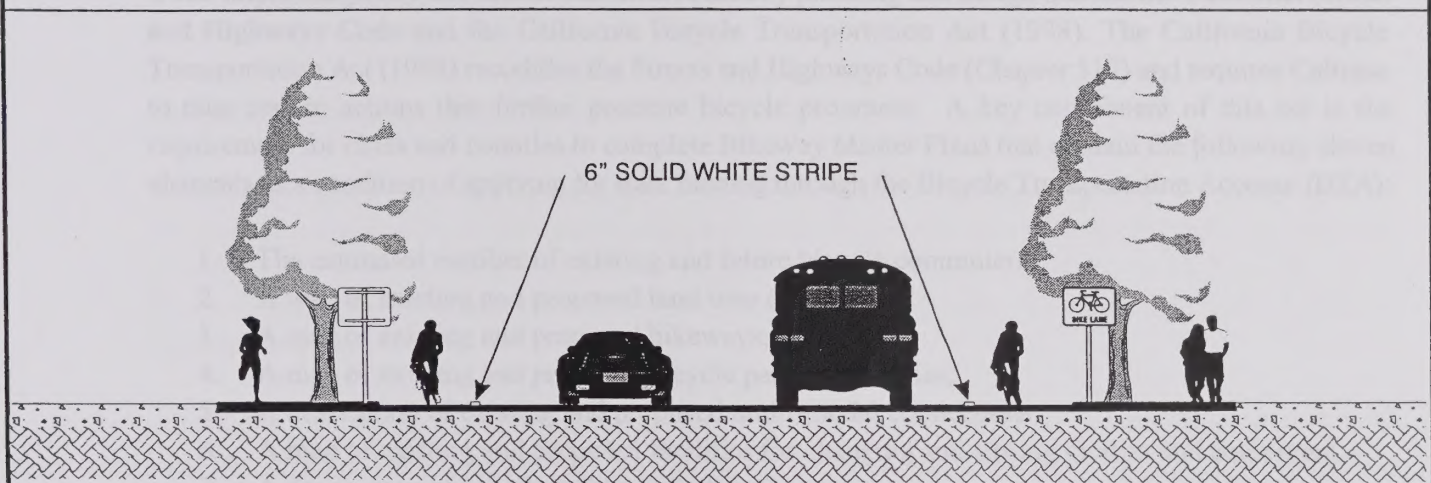
Chapter 1000 identifies specific design standards for various conditions and the relationship of bikeways to roadways. The Caltrans standards provide for three distinct types of bikeway facilities as described below and shown in Figure 1.

- Class I Bikeway (Bike Path) - Provides a completely separated right of way for the exclusive use of bicycles and pedestrians with cross-flow minimized. Caltrans standards call for Class I bikeways to have a minimum of 8 feet of pavements with 2 foot graded shoulders on either side. These bikeways must also be at least 5 feet from the edge of a paved roadway.



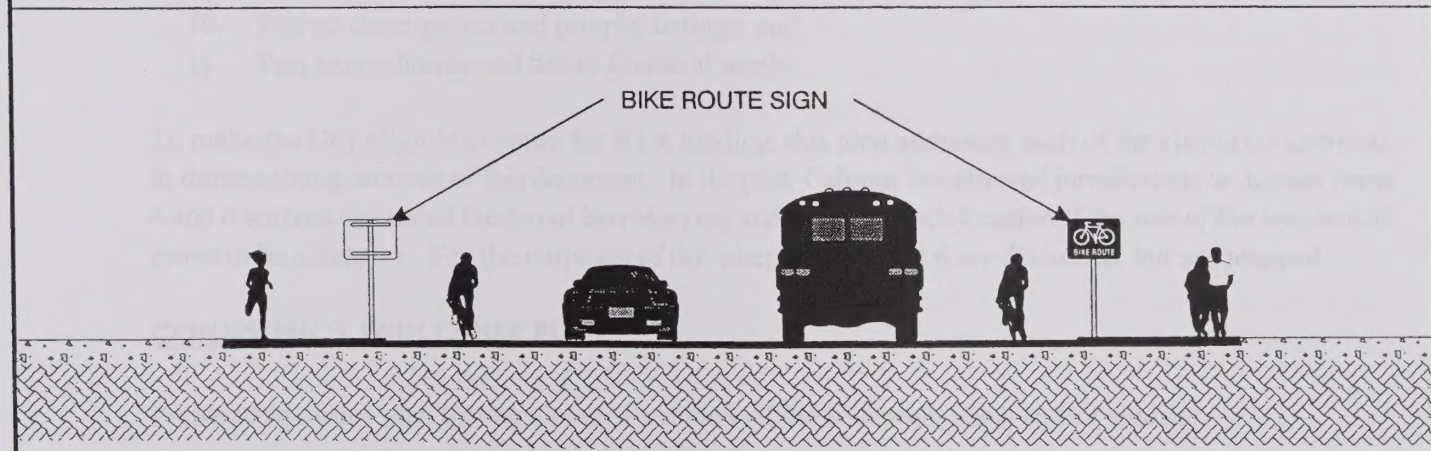
CLASS I BIKEWAY (Bike Path)

Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow minimized.



CLASS II BIKEWAY (Bike Lane)

Provides a striped lane for one-way bike travel on a street or highway.



CLASS III BIKEWAY (Bike Route)

Provides for shared use with pedestrian or motor vehicle traffic.

FIGURE 1

GENERAL BIKEWAY CLASSIFICATIONS

- Class II Bikeway (Bike Lane) – Provides a restricted right-of-way designated for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and crossflows by pedestrians and motorists permitted. Caltrans' standards require a six inch striped lane with a 4-5 foot paved shoulder for one-way bike travel on a street or highway.
- Class III Bikeway (Bike Route)- Provides for shared use with pedestrian and/ or motor vehicle traffic within the same right-of-way and is designated with signs only indicating "Bike Route." Class III bike routes are appropriate where restricted right-of-way would make a Class II facility infeasible.

Other important policy documents that affect bikeway planning and design include the California Streets and Highways Code and the California Bicycle Transportation Act (1998). The California Bicycle Transportation Act (1998) recodifies the Streets and Highways Code (Chapter 517) and requires Caltrans to take certain actions that further promote bicycle programs. A key component of this act is the requirement for cities and counties to complete Bikeway Master Plans that contain the following eleven elements as a condition of applying for state funding through the Bicycle Transportation Account (BTA):

1. The estimated number of existing and future bicycle commuters;
2. A map of existing and proposed land uses (Attractors);
3. A map of existing and proposed bikeways;
4. A map of existing and proposed bicycle parking facilities;
5. A description of existing and proposed multi-modal connections;
6. A map of existing and proposed facilities for changing and storing clothes and equipment;
7. A description of bicycle safety and education programs;
8. A description of citizen and community participation;
9. Consistency with other transportation, air quality, and energy plans;
10. Project descriptions and priority listings; and
11. Past expenditures and future financial needs.

To make the City eligible to apply for BTA funding, this plan addresses each of the eleven components in the remaining sections of this document. In the past, Caltrans has allowed jurisdictions to discuss items 4 and 6 without the added burden of inventorying and mapping each location if the size of the area would prove to be extensive. For the purposes of this plan, items 4 and 6 are discussed, but not mapped.

CONSISTENCY WITH OTHER PLANS

Preparation of this plan update included a review of the following plans and/or studies:

- Draft 2010 Sacramento City/County Bikeway Master Plan;
- City of Lincoln General Plan;
- Placer County Bikeway Master Plan;
- Twelve Bridges Specific Plan;

- Nicolaus Road Bicycle Path;
- Lincoln Crossing Specific Plan;
- Three D Specific Plan and Design Guidelines;
- Proposed Aviation Boulevard Extension;
- Sterling Pointe Specific Plan;
- Foskett Ranch Development Study;
- General Development Plan for Del Webb– Lincoln Hills;
- State Route 65 Widening; and
- Traffic Study for the Proposed Aviation Boulevard Extension.

Goals and policies and proposed bikeway facilities from these documents were reviewed for relevance and incorporation into this plan document. Relevant goals and policies from the above plans and studies are included in Appendix F.

COMMUNITY PARTICIPATION

Community participation was an important component of this plan for the purpose of obtaining input on existing bicycling facilities, potential roadways for improvement to accommodate bicycles, and the type of support facilities or programs needed to improve bicycling within the City of Lincoln. The development of the plan was based on an advocacy planning approach between City staff, interested organizations, and citizens.

A public workshop was held on March 15, 2001 at the Community Center to present the draft proposed bikeway system map and to receive public comment regarding the existing and proposed bicycling facilities in the City. The workshop was conducted as a joint effort with Placer County who in turn presented the draft Placer County Regional Bikeway Plan. Approximately 25 people attended including representatives from the City Council of Lincoln, the Placer County Transportation Planning Agency (PCTPA), City of Lincoln, City of Auburn, Loomis, City of Roseville, Oroville, Newcastle, bicycle advocates and local citizens. Participants provided comments concerning specific bike routes and facility improvements. Recommendations from the workshop were reviewed by the Consultant and City staff for possible incorporation into the draft bicycle system map. Key comments summarized below:

- Comment: Include a Class II bike lane connecting Lincoln to Wheatland.

Response – A bike connection between Lincoln and Wheatland is being discussed as part of the Metropolitan Transportation Plan (MTP) bike element, being prepared by the Sacramento Area Council of Governments (SACOG).

- Comment: Upgrade Highway 65 all the way to Marysville.

Response – Several intersections on Highway 65 north of Lincoln are being improved with left-turn channelization designs. In addition, the Lincoln Bypass, as proposed, will extend between

Lincoln and Wheatland. The Bypass will help alleviate congestion on Highway 65 making it safer for bicycle use.

- Comment: Extend the bikeways into Sheridan and Camp Far West. It would be a great way for the biking population to access the County without automobile congestion.

Response – Regional connections like this are being considered as part of the SACOG MTP. A project of this scope is outside the purview of the Lincoln BMP.

- Comment: Propose a loop starting in Lincoln going out to Camp Far West to either Wheatland or Sheridan and back to Lincoln.

Response – Same comment as above.

- Comment: A bike route between Lincoln and Roseville is needed. A lot of people commute between these two towns. Currently there are only three routes (Fiddymment, Industrial, and Highway 65) connecting the two towns. All are unsafe. The freeway is actually the safest route. The Blue Oaks Bridge over the railroad tracks is quite narrow. This short stretch should be upgraded to a bike route.

Response – The MTP proposed regional bike map shows a bike route between Marysville and Roseville along SR 65. The route is proposed as a Class II through the City of Lincoln, and continues as a proposed Class II into Roseville. A Class I connection will be provided from Lincoln Parkway (at the Lincoln City limits) into Rocklin along Sioux Drive, which connects to Stanford Ranch Road. Also, Industrial Drive is a proposed Class II into Roseville.

ORGANIZATION OF THE PLAN

The remainder of this document includes the following components:

- I - Introduction
- II - Bikeway Goals and Policies;
- III - Existing Conditions;
- IV - Analysis of Demand;
- V - Proposed System;
- VI - Cost and Funding Analysis; and
- VII - Implementation.

The information presented for each of these components is the result of the data collection efforts of City of Lincoln staff and the consultant. The components have been organized to provide a logical discussion of how the plan was prepared. The overall planning effort began with the development of bikeway goals, objectives and policies to direct the study.

II. GOALS, OBJECTIVES AND POLICIES

The development of goals, objectives, and policies for this plan are intended to provide specific direction on the necessary actions involved in planning, designing, funding, and constructing bikeway facilities. The following information relies on an understanding of the relationship between the proposed bikeway system, key issues facing implementation of specific routes, and the requirements of local, state, and federal funding programs. The goals and policies are organized by topic areas that relate to specific implementation issues. The topic areas include:

- Overall System;
- Land Development;
- Commuting;
- Safety Education;
- Environmental Considerations; and
- Funding.

The purpose of organizing this section by topic area is to provide City staff, decision makers, and citizens with clear and concise policy direction and guidance on how to implement the bikeway facilities proposed in this plan. Each topic area addressed below includes an overall goal, measurable objective, and policies with specific action statements related to the development of specific facilities or programs within the City of Lincoln.

OVERALL SYSTEM

The following goal and policy statements express the philosophy behind this plan and the proposed system of bikeways. The statements stem from the City's desire to provide residents and visitors with a connected bikeway/path system that can accommodate both commute and recreational trips throughout the City.

Goal 1: **Provide a well-connected bikeway system within the City of Lincoln to improve the quality of life for all residents and visitors.**

Objective: Construct priority bikeways identified in the proposed system map and provide for the maintenance of both existing and new facilities.

Policies

- 1.1 Prepare and maintain a Bikeway Master Plan that identifies existing and future needs, and provides specific recommendations for facilities and programs including adequate provisions for bicycle and pedestrian use to, within, and from the City of Lincoln.

- 1.2 Require all bikeways to conform to design standards contained in the latest version of the Highway Design Manual, Chapter 1000: Bikeway Planning and Design, Caltrans, unless otherwise established by the City.
- 1.3 Consider a proposed route's importance in providing access and connectivity to adjacent bikeway facilities and destinations when recommending bike routes for implementation.
- 1.4 Coordinate with Placer County, City of Rocklin, and City of Roseville regarding the implementation of the proposed system of bikeways.
- 1.5 Provide bicycle connections that allow for regional bike travel to and from the City of Lincoln.
- 1.6 Integrate bicycle planning with other community planning, including land use and transportation planning.
- 1.7 As funding allows, implement the proposed bikeway system in this Bikeway Master Plan in a cost effective manner.

LAND DEVELOPMENT

As shown in the population and employment growth expectations, the City of Lincoln has significant planned development over the next 20 years. Proposed development projects should adhere to the policy statements below regarding access, mobility, and support facilities for bicyclists and pedestrians.

Goal 2: Include bikeway facilities in all appropriate development projects to facilitate on-site circulation for bicycle and pedestrian travel, on-site bicycle parking, and connections to the proposed system.

Objective: Maximize the number of daily trips made by bicycling to and from new development projects within the City of Lincoln.

Policies

- 3.1 Require new development projects to reserve the right-of-way for multi-use trails shown in the proposed system of bikeways.
- 3.2 Meet the requirements of the Americans with Disabilities Act when constructing facilities contained in the proposed system, where applicable.
- 3.3 Provide pedestrian/bicycle crossings at appropriate intervals along new roadways that will adequately serve new large-scale commercial office, industrial development, and residential development.

- 3.4 Provide one mile of pedestrian/bicycle trails per 2,500 population (Amended Public Facilities Element, October 1998).
- 3.5 Adhere to specific policies contained within adopted plans and specific plans relating to the design, implementation, and function of bikeways and pedestrian facilities within the City of Lincoln.
- 3.6 Encourage new commercial development to provide bicycle and pedestrian access to surrounding residential areas.
- 3.7 Encourage new commercial development to place required bike racks near entrances for employees and customers.

COMMUTING

Commuters that bicycle to the City can represent a larger percentage of total commute trips if a comprehensive network of interconnected bikeway facilities is developed. This plan proposes to implement such a system as defined by the following goal and policy statements.

Goal 3: Increase bicycle trips to work to reduce vehicle congestion, improve air quality, conserve energy use, and improve individual physical fitness.

Objective: Develop a system of bikeways that provides direct routes between residential areas and to major employment centers.

Policies

- 3.1 Provide connections to the proposed system from all existing and future transit facilities and transfer points.
- 3.2 Encourage employers to install and/or maintain support facilities such as bicycle racks, personal lockers, and showers at appropriate locations to promote bicycle use.
- 3.3 Employers should encourage employees to consider bicycling as an alternative mode for commuting to and from employment centers.

SAFETY EDUCATION

Safety education is an important aspect of increasing bicycle use. If bicyclists or potential bicyclists perceive that the bikeway system is unsafe, they will be discouraged from using it. Therefore, the following goal and policy statements are intended to improve the users knowledge of how to use the bikeway system safely.

Goal 4: **Educate all residents of the City of Lincoln about how to use bikeway and trail facilities safely.**

Objective: Improve bicycle safety in the City of Lincoln by providing a system of connected routes that minimize conflicts with autos and pedestrians.

Policies

- 4.1 Play an active role in educating residents about bicycle and pedestrian safety in conjunction with public and private schools and civic organizations.
- 4.2 Use available accident data to monitor bicycle accident locations and target education programs in those locations.

ENVIRONMENTAL CONSIDERATIONS

Bikeway facilities are generally considered to benefit the environment because their use reduces demand for motorized travel and promotes beneficial life style changes. Nevertheless, the construction of specific facilities may adversely affect the physical environment. The following goal and policy statements have been developed to avoid and minimize potential impacts to the environment.

Goal 5: **Avoid adverse environmental impacts associated with the implementation of the proposed system.**

Objective: Mitigate potentially significant impacts to a level of less than significant.

Policies

- 5.1 Conduct site-specific environmental review consistent with the California Environmental Quality Act for individual bicycle projects as they advance to the implementation stage of development.
- 5.2 Solicit and consider community input in the design and location of bikeway facilities that connect to neighborhoods.
- 5.3 Consider the effect on other transportation facilities such as travel lane widths, turn lanes, on-street parking, and on-site circulation when planning and designing on-street bikeways.

FUNDING

To obtain the funding required to implement the proposed system, the City of Lincoln must take advantage of funding sources at the state and federal level. It will also require a commitment of local funding.

Goal 6: Acquire sufficient funding to construct the proposed system within the next 20 years.

Objective: Maximize the amount of local, state, and federal funding sources for bikeway facilities that can be used by the City of Lincoln for the implementation of the proposed system.

Policies

- 6.1 Periodically update current information regarding regional, state, and federal funding programs for bikeway facilities along with specific funding requirements and deadlines.
- 6.2 Where feasible, consider joint grant applications with other agencies, such as the City of Roseville and/or Placer County, for state and federal funds.

REGIONAL AND MULTIMODAL CONNECTIONS

To encourage bicycle use, a bikeway plan should contain connections to other transportation modes of the City of Lincoln, and it should connect with other forms of travel such as walking and public transit at transfer locations. The nature of existing regional and multimodal connections is discussed below.

REGIONAL CONNECTIONS

The City of Lincoln is bordered by incorporated Placer County. The Town of Lincoln and the City of Auburn are located east of Lincoln with primary access from Highway 99. The City of Roseville and the City of Rocklin are located to the south with primary access from Highway 65 and Industrial Boulevard. Designated bikeways providing regional connections to adjacent communities do not exist. Some inter-jurisdiction agreements are discussed under Future Conditions.

MULTIMODAL CONNECTIONS

Multimodal connections in the City of Lincoln are especially important due to barriers for nonmotorized modes such as the lack of existing local routes, bikeway facilities, and sidewalks. A transit center currently exists at Third and F Streets, served by Lincoln Transit and Placer County Transit.

Other potential multimodal transfer points typically include park-and-ride lots. The City of Lincoln does not have any official park-and-ride lots. Non-designated park-and-ride activity occurs at D and Second Streets, but the extent of this activity is unknown.

III. EXISTING CONDITIONS

This summary of existing conditions describes the current status of bikeway facilities and programs in the City of Lincoln. The discussion focuses on existing bikeways, multi-modal connections, and bikeway support facilities and programs. Figure 2 shows the location of existing bikeways and major attractors within the City.

EXISTING BIKEWAYS

During the preparation of the Bikeway Master Plan, the consultant conducted field observations to identify and verify existing bikeway facilities within the City of Lincoln. An existing Class I bike path connects McBean Parkway to 6th Street along the west side of East Street. A few roadways within the City contain Class II bicycle lanes (on-street delineated lanes with appropriate signing and striping). These include First Street from D Street to Fuller Street, D Street from First Street to McBean Parkway, Joiner Parkway south of Nicolaus Road, Del Webb Boulevard, Ingram Parkway, East Lincoln Parkway north of Twelve Bridges Drive, and a portion of Ferrari Ranch Road. There are no existing Class III bike routes within the City.

REGIONAL AND MULTIMODAL CONNECTIONS

To encourage bicycle use, a bikeway plan should contain connections to other communities outside of the City of Lincoln, and it should connect with other forms of travel such as walking and public transit at transfer locations. The extent of existing regional and multi-modal connections is discussed below.

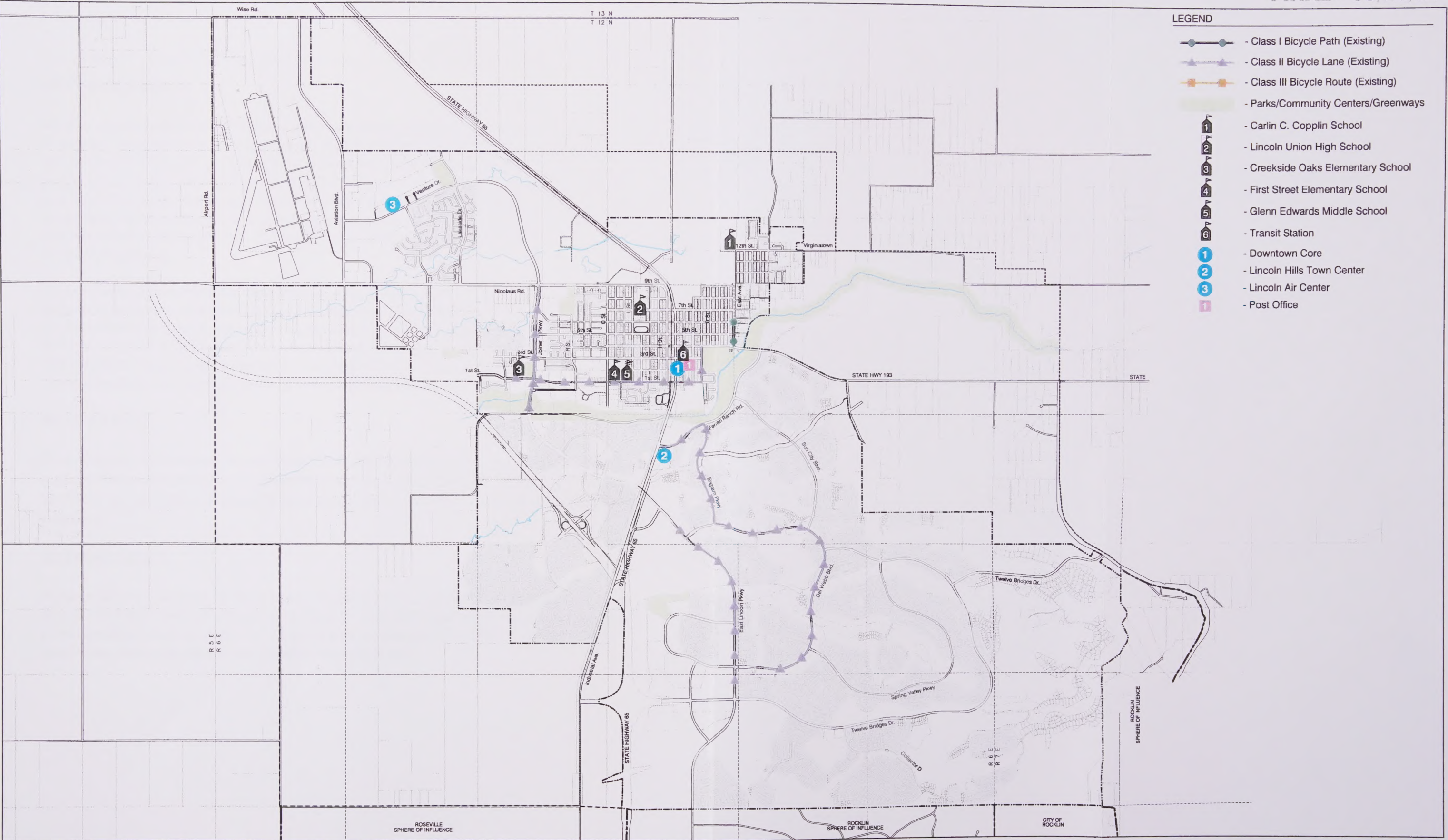
REGIONAL CONNECTIONS

The City of Lincoln is bordered by unincorporated Placer County. The Town of Loomis and the City of Auburn are located east of Lincoln with primary access from Highway 193. The City of Roseville and the City of Rocklin are located to the south with primary access from Highway 65 and Industrial Boulevard. Designated bikeways providing regional connections to adjacent communities do not exist. Some new proposed connections are discussed under Future Conditions.

MULTI-MODAL CONNECTIONS

Multi-modal connections in the City of Lincoln are especially important due to barriers for continuous bicycle travel such as the lack of existing continuous bikeway facilities and sidewalks. A transit center currently exists at Third and F Streets serviced by Lincoln Transit and Placer County Transit.

Other potential multi-modal transfer points typically include park-and-ride lots. The City of Lincoln does not have any official park and ride lots. Non-designated park and ride activity occurs at D and Second Streets, but the extent of this activity is unknown.



SUPPORT FACILITIES

Bikeway support facilities include physical infrastructure designed to accommodate or promote the use of bicycles. Examples include bicycle racks, bicycle lockers, restrooms, and shower facilities. A windshield survey of major shopping centers, schools, parks, and employment centers found bike racks located at most major commercial centers in the City. However, no evidence of other support facilities such as bicycle lockers, restrooms, or shower facilities dedicated for bicyclists exists. Support facilities are important because potential riders can be discouraged from riding if they think that their bicycle may be stolen, vandalized or if sufficient facilities are not provided to make bicycling convenient, particularly for commute purposes.

In many cities and counties, the installation of secure bicycle parking is required as part of local transportation system management plans or the zoning code. For example, Yuba City, CA requires the provision of bicycle racks as part of their zoning code while similar requirements apply in the City of Roseville as part of their transportation systems management program. The City of Lincoln, as part of their rideshare program, requires that *bicycle parking* facilities be made available at the request of any tenant or employee whose primary mode of commuting is by bicycle.

BICYCLE SAFETY

Bicycle safety was evaluated as part of the BMP development process. In particular, existing available bicycle accident data was reviewed to identify accident locations within the city limits, and local law enforcement agencies were contacted to identify community bicycle safety programs.

ACCIDENT DATA

Accident data was provided by the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) Statistics and applied to Figure 3. This data represents all bicycle and pedestrian related accidents occurring in the City of Lincoln between January 1997 and December 2000. Table 1 summarizes the accident data by year, severity, and party at fault.

Table 1
City of Lincoln Three-Year Accident Summary
(January 1997 – December 2000)

Year	Accidents			Party at Fault		
	Total	Injuries	Fatalities	Bicyclist	Driver	Other
1997	15	13	0	10	3	2
1998	15	15	0	7	4	4
1999	16	11	0	10	4	2
2000 (thru December)	4	3	0	2	0	2
Total	50	42	0	29	11	10
Source: California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) Statistics, December 2000.						

TRENDS AND COMPARISONS

As shown in Table 1, 50 bicycle accidents were reported between January 1997 and December 2000. Primary causes of these accidents generally resulted from illegal turning movements, excessive speed, right-of-way violations, and other vehicle code violations by drivers and bicyclists. Although there were no fatalities reported, the 50 accidents did result in injuries to 42 persons. In the majority of accidents, the primary collision factor was an illegal turn or maneuver by the bicyclist. This information suggests that increased education and enforcement as well as a well connected and easily understood bikeway system should be important tools in decreasing bicycle accidents. Figure 3 shows the location of each bicycle accident reported in Table 1. The information shown in the figure also indicates the party at fault and the severity of the accident.



Table 2 was prepared to compare the rate of bicycle accidents in the City of Lincoln with other locations. The table shows a calculated bicycle accident rate based on number of bicycle accidents per 1,000 persons. This information is only intended for comparison purposes and does not contain sufficient data to demonstrate any statistical relationships.

Table 2 Comparison of Bicycle Accidents on Local Roads Per 1,000 Persons (Selected California Cities)			
City	Population	Accidents/Year	Accidents/ 1,000 Persons
City of Lincoln	10,700	15^a	1.5
City of Citrus Heights	88,000	26 ^b	0.30
City of Livermore	62,857	43 ^b	0.68
Yuba City	31,450	38 ^b	1.21
Marysville	12,700	10 ^b	0.79
Visalia	70,000	78 ^c	1.10
Roseville	80,000	32 ^c	0.40
Santa Rosa	115,000	90 ^c	0.80
Escondido	105,000	88 ^c	0.80
Notes: a Reported accidents, 3 year average (1997-1999) b Reported accidents, 3 year average (1996-1998) c Reported accidents in latest year (1990-1992)			
Source: Local Police Reports and California Highway Patrol Statewide Integrated Traffic Records System (SWITRS) Statistics.			

Table 2 indicates that the calculated bicycle accident rate for the City of Lincoln is relatively high compared to other California cities of comparable size. As a growing but older community without a complete bikeway system, bicyclists are forced to mix with other traffic increasing the chance for conflict. It should be noted that because this information reflects reported accidents only, it does not include unreported accidents and under-counted non-automobile-related accidents. For example, bicycle-bicycle or bicycle-pedestrian accidents tend to be less severe and consequently under-reported. Studies have shown that these types of accidents occur frequently.

SAFETY PROGRAMS

A review of bicycle safety programs in Lincoln was conducted for this study. The review included discussions with Lt. Paul Shलगren, Lincoln Police Department, Officer Larry Blubbins, California Highway Patrol, James McLeod, City of Lincoln Department of Public Works, Melody Lindsay, Secretary, Creekside Oaks Elementary School, Rueben Ayala, Principal, First Street Elementary School, and Maricela Flores, UC Davis Trauma Center Outreach Program. All persons interviewed emphasized the need for bicycle safety and education programs for schools and for citizens. A summary of current safety programs along with specific contacts is included in Table 3.

Table 3
Bicycle Safety Education Program Summary

Agency	Contact Person	Safety Program
City of Lincoln Police Department	Lt. Paul Shelgren	• Annual Bicycle Rodeo • Helmet Enforcement Program • Helmet Distribution Program • Bicycle Safety Programs at First Street Elementary and Creekside Oaks Elementary
UC Davis Trauma Center Outreach Program	Maricela Flores	• Student Bicycle and Safety Education Program at First Street Elementary

Source: Fehr & Peers Associates, 2001

Each program is described below:

- Bicycle Rodeos- are designed to teach the rules of the road and safe riding practices to school age bike riders.
- Bicycle Helmet Enforcement Program- is conducted by the Lincoln Police Department and focuses on issuing warnings to students who do not ride with a bicycle safety helmet. A warning card including discounts for purchasing bicycle helmets is given to violators.
- Bicycle Helmet Distribution Program- Approximately 250 helmets are given away annually to local students.
- Bicycle Safety Instruction - Lincoln Police Department conducts bicycle safety instruction at local elementary schools at the beginning of the school year.
- Student Bicycle and Safety Education Program– Sponsored by UC Davis Trauma Center Outreach Program. This program includes teaching pedestrian safety by creating a mock city on the playground and instructs students how to cross roadways safely.

IV. ANALYSIS OF DEMAND

The objective of analyzing bicycle travel demand is to identify existing bicycle ridership levels and travel patterns, along with projected future use and possible methods for stimulating additional ridership. This section provides information about City of Lincoln projections for population and employment and their influence on bicycle travel demand.

EXISTING MAJOR ACTIVITIES CENTERS

One purpose of a BMP is to provide facilities that connect residential areas to employment, commercial, educational, and recreational centers. These facilities support bicycle travel demand for both commuter and recreational trip purposes. Major activity centers in the City of Lincoln include regional commercial areas such as Sterling Pointe Shopping Center, Lincoln Hills Town Center, and the downtown core. In addition, employment centers, schools, parks and Sierra College Annex serve as potential destinations for bicyclists. Major activity center locations are identified in Figure 2.

POPULATION AND EMPLOYMENT TRENDS

The following discussion contains estimates of existing and forecasts of future, population and employment levels to determine trends and how they affect demand for bikeway facilities.

EXISTING POPULATION

In January 1999, the City of Lincoln had an estimated total population of 8,825 persons. Table 4 shows a comparison of population estimates for the City of Lincoln and several surrounding cities between 1999 and 2000.

Table 4 City of Lincoln Population Estimates			
Jurisdiction	1999	2000	% Increase
City of Lincoln	8,825	10,700	21.2 %
Auburn	11,700	11,400	-2.6%
Loomis	6,050	5,925	-2.1%
Roseville	72,100	80,000	10.9%
Rocklin	31,950	35,250	10.3%
Source: California Department of Finance Report E-1 2000.			

Between January 1999 and January 2000, DOF population data shows that the City of Lincoln experienced a 21 percent growth in population. Historical population growth since 1990 shows the City of Lincoln has been averaging approximately three percent per year growth in population and is projected to continue at or above this figure. *The most recent 2000 Census data shows the January 2001 population for the City of Lincoln has increased to 13,900*

EXISTING EMPLOYMENT

According to SACOG's 1995 *Regional Housing, Population and Employment Projections*, total employment for the City of Lincoln in 2000 is estimated at 4,251 workers with 591 engaged in retail and 3,660 in other types of employment. Historically, the City of Lincoln had a total labor force of 1,716 in 1980 and approximately 3,100 in 1990. Between 1990 and 2000 employment has grown approximately 37 percent.

BICYCLE RIDERSHIP LEVELS

Bicycle ridership levels are not easily measured or projected for an entire City without extensive data collection efforts. Existing and available data for the City of Lincoln currently includes the 1990 Census data on mode split. With this limited amount of information, the following discussion describes both existing and future bicycle ridership levels and their relationship to the availability of a comprehensive bikeway system in the City of Lincoln.

EXISTING RIDERSHIP LEVELS

According to a recent Lou Harris Public Opinion Poll, nearly three million adults, or about one in 60, already commute by bike. This number could rise to 35 million if more bicycle friendly transportation systems existed (USDOT, 1994). The concept of "demand" for bicycle facilities is difficult to measure. Unlike automobile use, where historical trip generation studies for different types of land uses allows an estimate of future "demand" for travel, no such widely used methodology currently exists for bicycles.

A common term used in describing demand for bicycle facilities is "mode split." Mode split refers to the form of transportation a person chooses to take, be that walking, bicycling, using public transit, or driving. Mode split is often used in evaluating commuter alternatives such as bicycling, where the objective is to increase the "split" or percentage of people selecting an alternative means of transportation. From the 1990 Census, mode split information is available for the journey-to-work for Placer County and City of Lincoln. This information is presented in Table 5.

Table 5 1990 CENSUS Journey-to-Work Mode Split (All Workers Who Did Not Work at Home)	
Mode	Placer County (City of Lincoln) Mode Split %
Drive Alone	82.3 (77.5)
Carpool	12.6 (15.4)
Public Transportation	0.8 (0.4)
Bicycle	0.6 (0.5)
Walk	2.6 (3.6)
Other	1.1 (0.2)

As shown in Table 5, less than one percent of home-based work trips for City of Lincoln residents are made by bicycle. This is not surprising given the lack of existing bikeway facilities in the City, somewhat limited public transportation, and the fact that the Census data does not include trips from home-to-school in the journey-to-work data set. This is an important omission because home-to-school trips occur during the same morning peak hours as typical commuter trips. Since many children ride bicycles to school, the actual number of bicycle trips during the morning peak hour associated with commuters is expected to be slightly higher. Nevertheless, with just a few miles of existing bikeways in the City coupled with the lack of connectivity between existing routes, residents may be discouraged from riding due to perceptions of safety or the lack of a complete bikeway system with connections to their desired destination.

FUTURE POPULATION AND EMPLOYMENT

According to the Placer County Regional Transportation Agency (PCTPA) development assumptions for their Traffic Impact Fee program, total population for the City of Lincoln is projected to reach approximately 59,000 in the year 2020. This represents a four-fold increase in 20 years. The current City of Lincoln General Plan estimated residential population growth to reach about 29,000 by the year 2010 and an increase in City population to about 54,000 with development on all lands (buildout) in 2020. Using this projection, population growth in the City will be significant. An increased residential population will require additional parks and recreational facilities and in turn, a well-connected bikeway system to increase non-auto access and mobility.

Based on employment projections by SACOG, employment in the City of Lincoln will increase from 4,250 in 2000 to approximately 10,900 in 2020. This represents approximately a 59 percent increase.

FUTURE BICYCLE RIDERSHIP

The future development planned for the City of Lincoln will result in increases in daily and peak-hour traffic. Future bicycle ridership levels will depend on a number of factors such as population and

employment trends as discussed above, the availability of bikeway facilities, traffic volumes and the location, density, and type of future land development. Proposed developments such as the Sierra College Annex provide opportunity for increased bicycle access and use. Even with only modest population and employment growth, and assuming the mode split of 0.6 percent for bicycles does not change significantly, bicycle trips for work and recreation in the City of Lincoln will increase.

According to *The National Bicycling and Walking Study: Transportation Choices for a Changing America*, a much larger increase, upwards of two percent of all daily trips, could occur if a balanced, well-connected system of bikeways are implemented (Federal Highway Administration, 1994). The proposed system of bikeways for the City of Lincoln, as described in the following section, helps to achieve a balanced and well-connected system and therefore will contribute to a higher share of bicycle trips. The system as proposed provides a destination based network of connected bikeways that improve mobility and access for residents and visitors to major attractions and activity centers within the City. The benefits will be reduced congestion and improved air quality for the City and surrounding area.

- A proven pavement and technology to improve safety and comfort
- A well-connected system of bikeways that provides a high level of connectivity

The following table provides a summary of the system's goals and objectives.

- **Low-Cost:** The system should be designed to provide a high level of connectivity and safety at a low cost. The system should be designed to provide a high level of connectivity and safety at a low cost.
- **Connectivity:** The system should provide a high level of connectivity and safety at a low cost. The system should be designed to provide a high level of connectivity and safety at a low cost.
- **On-Street Bikeways:** On-street bikeways should be provided in areas where there is a high level of connectivity and safety at a low cost. The system should be designed to provide a high level of connectivity and safety at a low cost.

V. PROPOSED SYSTEM

This section describes the proposed system of bikeways developed for the City of Lincoln for this plan.

PROPOSED SYSTEM DEVELOPMENT

The proposed system of bikeways was developed through an Advocacy Planning process between the City of Lincoln, interested agencies, bicycle support groups and members of the community. The advocacy planning process entails the following steps:

- A thorough review of existing plans and studies to determine and map what exists today;
- Direct input from City staff about what routes and facilities are needed in the future based on projected land use changes and growth;
- A public presentation and workshop to incorporate public input; and
- A refinement process that considers bikeway planning criteria.

The following bikeway planning criteria were considered in refining the proposed system.

- Use - Bikeways contained in the proposed system should reflect use levels that are commensurate with the level of investment required for construction and maintenance.
- Coverage - The system should provide balanced access from locations outside and within the City for both commuting and recreation routes.
- Safety - The system should provide the highest level of safety possible for bicyclists and pedestrians while minimizing major safety concerns such as narrow roadways, bicycle/pedestrian conflicts, and auto/bike conflicts.
- Connectivity - The system should provide bikeway/pedestrian connections to major activity centers, multi-modal transfer locations, and to routes that provide access to regional connections (i.e., SR 65 and SR 193). Activity centers in the City include residential areas, regional parks, shopping centers, employment centers, government centers, transit centers, and other recreational opportunities.
- On-Street Bikeways - Class II bike lanes should be provided as the preferred on-street bikeway facility. Class III bike routes should be used when Class II bike lanes are not feasible due to existing physical or environmental constraints. As with bike lanes, the designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to

assure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists.

- **Off-Street Bikeways-** Where feasible, Class I bike paths on grade separated rights-of-way should be implemented. These bikeways provide a higher degree of safety and recreational benefit than bikeways located on streets. They can also become linear parks, adding to the range of amenities for local communities. In many areas of the City, the cost of constructing off-street bikeways may be competitive with that for on-street facilities due to the physical characteristics of the existing roadway system and the cost to widen roads.

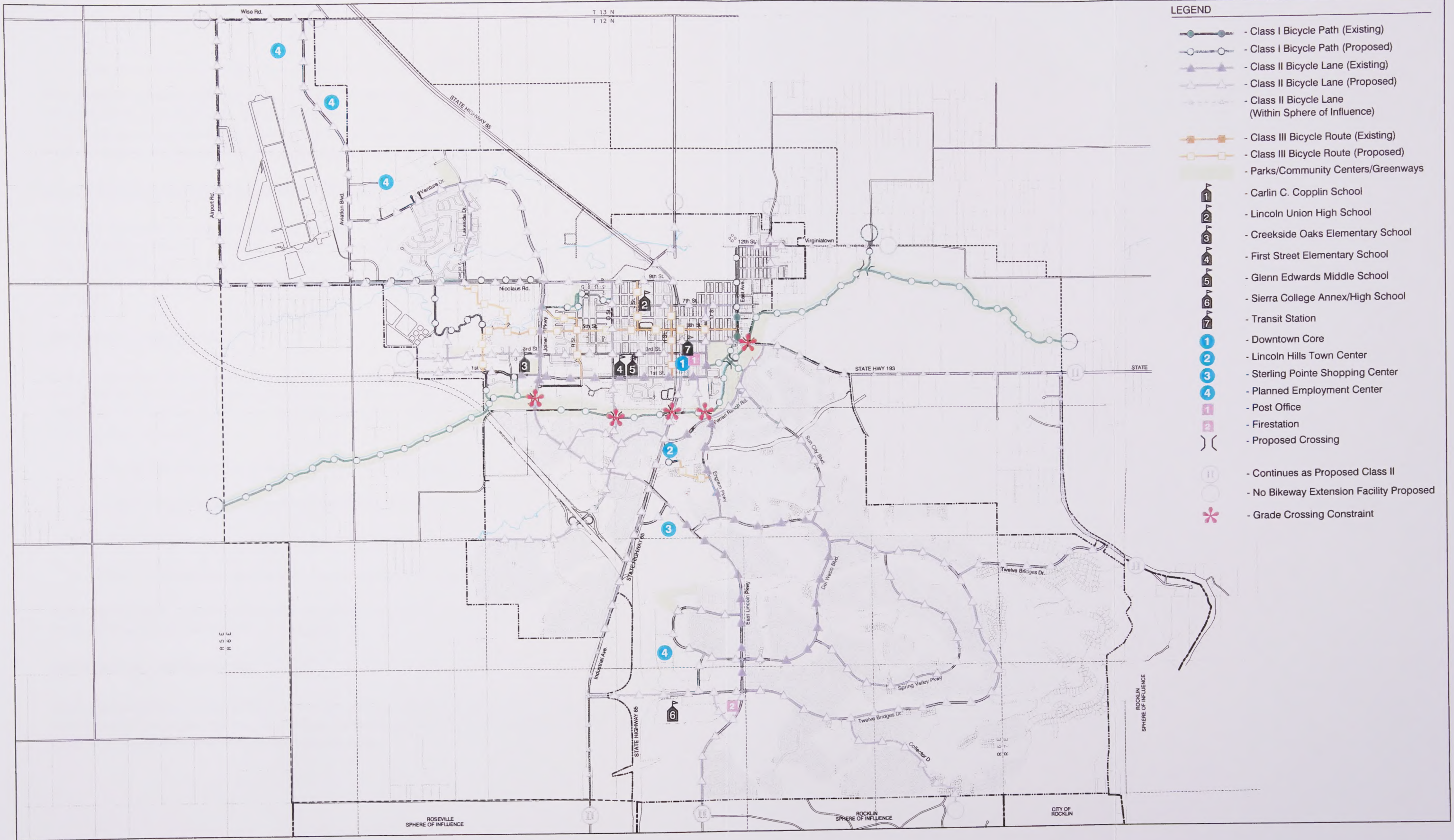
The proposed system map was presented to the general public at a public workshop on March 15, 2001. Based on comments received through this review process, the proposed system map was refined according to the bikeway planning criteria above.

The proposed bikeway system is shown in Figure 4. It includes a total of 60 miles (97 km) of bikeway facilities. The system is comprised of approximately 9 miles of existing bikeways, and an additional 52 miles of proposed bikeways. Table 6 shows the number of proposed miles (kilometers) for each bikeway classification. The system connects residential areas with major activity centers in the City of Lincoln, and it provides some regional connections to communities east and south of the city. Each route is classified according to Caltrans³ standards presented earlier in Figure 1.

Table 6
Length of Proposed System by Bikeway Classification
Miles (Kilometers)

Bikeway Classification	Existing	Proposed	Total
Class I	0.2 (.3)	12.8 (20.5)	13.1 (20.8)
Class II	7.5 (12.1)	39.6 (63.4)	47.1 (75.5)
Class III ¹	0.0 (0.0)	4.7 (7.4)	4.7 (7.4)
Total	7.7 (12.4)	57.1 (91.3)	64.9 (103.7)

Note: ¹the final designation of Class II Bike Lanes and Class III Bike Routes may change when detailed technical analysis is developed for individual projects as they advance to implementation.



The proposed system consists of Class I, II, and III facilities. In general, Class I bike paths were designated along Auburn Ravine, and adjacent to East Avenue north of SR 193. Class II bike lanes were designated on major arterials and collectors due to the higher traffic volumes and speeds, and Class III bike routes were recommended on local connecting streets and residential areas.

REGIONAL AND MULTI-MODAL BIKEWAY CONNECTIONS

Regional connections include those bikeway facilities that connect the City with urban areas and activity centers outside of the City. Multi-modal connections allow bicyclists and pedestrians to transfer to other modes such as buses. Including these components in the discussion about the proposed system is important for the development of a bikeway system that provides a high degree of both accessibility and mobility.

REGIONAL CONNECTIONS

In the development of the proposed bikeway routes, an effort was made to assess the potential connectivity of City of Lincoln bikeways with existing or planned bikeways on streets surrounding the City and/or within the City's sphere of influence. Based on discussion with the PCTPA, the following regional connections are proposed:

- Class II bike lanes are proposed to continue on SR 193 east of the City limits;
- Class II bike lanes are proposed for Sierra College Blvd. South of SR 193;
- Class II bike lanes are proposed for Industrial Avenue south of the City limits; and
- Class II bike lanes are proposed for East Lincoln Parkway south of the City limits.

At the present time, no bikeways are proposed north or west of the City limits on Wise Road, Airport Road, Nicolaus Road, Gladding Road, or Highway 65.

MULTI-MODAL CONNECTIONS

The proposed bikeway system includes routes that overlap with and provide access to existing City of Lincoln transit routes and stations. To facilitate use of these routes by bicyclists, all transit buses and major transit stations should be equipped with bike racks.

SUPPORT FACILITIES AND PROGRAMS

Support facilities and education programs are an important part of the proposed bikeway system. Existing bicycle facilities are limited in the City of Lincoln based on available data collected during the study. The following information provides recommendations on improving the availability of support facilities.

BICYCLE SHOWER, PARKING, AND LOCKER FACILITIES

Support facilities such as bicycle parking, shower and locker facilities can encourage bicycling by reducing the threat of theft and making riding more convenient. Properly designed bike racks should be considered near major bicycle destinations in the City and work locations. For the most part, these facilities should be required for new developments that are likely to experience a demand for bicycle parking such as parking areas, commercial centers and recreational facilities, and employment centers.

Where possible, existing activity centers should be encouraged to add bicycle-parking facilities if they are lacking. The type of parking facility (bike rack or bicycle locker) should be selected based on (a) cost, (b) ease of use, and (c) ability to prevent theft.

Access to shower and locker facilities may help encourage people to commute by bicycle, particularly in the summer months. Many jobs require employees to wear specific uniforms or formal attire such as suits and ties. By having shower and locker facilities, employees have the option to shower and dress at work. This is an important consideration for bicycle commuters since they cannot control their travel environment and are much more dependent on support facilities located at the workplace.

The following action is recommended for increasing the number of locations with bicycle parking, shower, and locker facilities:

- Encourage the installation of bicycle parking, shower, and locker facilities where appropriate such as the planned employment center east of Aviation Blvd.;
- Actively pursue state and federal funding to install bicycle parking, shower, and locker facilities at existing activity and employment centers; and
- Comply with the multimodal requirements of the Lincoln ridesharing program as established in Chapter 18.45 of the City's Municipal Code as it pertains to bicycle parking and support facilities.

CROSSING PROTECTION CROSSING ANALYSIS

These improvements should be targeted for major intersections on the proposed bikeway system, and at locations where students cross a busy street to gain access to campus classrooms and facilities. The following steps are recommended to build upon this effort.

- Use signing, striping, flashing beacons, raised crossing bumps, and pedestrian actuated signals at street crossings with high levels of pedestrian and bicycle demand when warranted by engineering standards.
- Install bicycle detectors at signalized intersections along the bikeway system as intersections are upgraded. Detectors should be located within the striped bike lane either along the curb or between the right-turn lane and through lane.

TABLE 7
Estimated Sign and Crossing Costs for Bikeway Crossings

Crossing Type	Estimated Cost Per Crossing	
	Basic	Maximum
Class III Basic Road		
• signing only	\$0.000	\$0.00
• signing plus raised crosswalk improvements	\$07.000	\$07.000
• signing plus pedestrian-actuated intersection	\$110.000	\$110.000
• signing plus raised crosswalk improvements	\$200.000	\$104.000
Class II Basic Road		
• signing and striping only	\$0.000	\$0.000
• signing and striping plus raised crosswalk improvements	\$41.000	\$41.000
• signing and striping plus pedestrian-actuated intersection	\$100.000	\$100.000
• signing and striping plus raised crosswalk improvements	\$200.000	\$100.000
Class I Basic Road		
• signing and striping plus raised crosswalk improvements	\$100.000	\$100.000

Note: All costs are estimates and should be adjusted to the specific conditions of the crossing and the location of the crossing.

The application of specific unit costs to proposed projects is based on information from the existing conditions inventory and proposed information provided by the City. The Consultant conducted an on-site inventory of the proposed bikeway and classed each crossing according to the relative level of improvement (i.e., crossing with the least changes to the existing roadway). The three levels of improvement classification included minor, moderate, and major, which correspond to the cost categories in Table 7. This approach results in unit costs for Class III bike roads that are similar

VI. COST AND FUNDING ANALYSIS

Implementation of the proposed system will require funding from local, state, and federal sources and coordination with other agencies. To facilitate funding efforts, this section will present conceptual construction cost estimates for the recommended proposed system along with a brief description of past expenditures for bikeway and pedestrian facilities.

COST ESTIMATES

Table 7 contains a unit cost summary for constructing the proposed bikeway facilities in Figure 4 in the City of Lincoln. These cost estimates are based on costs experienced in various other California communities and previous bikeway planning projects. However, these cost estimates should be used only to develop generalized construction cost estimates and project prioritization. More detailed estimates can be developed after preliminary engineering.

TABLE 7 Generalized Unit Cost Estimates for Bikeway Construction		
Facility Type	Estimated Cost Per	
	Mile	Kilometer
Class III Bike Route		
• signing only	\$1,000	\$600
• signing plus minor road improvement	\$37,000	\$23,000
• signing plus moderate roadway improvement	\$149,000	\$93,000
• signing plus major roadway improvement	\$296,000	\$184,000
Class II Bike Lane ¹		
• signing and striping only	\$5,000	\$3,000
• signing and striping plus minor roadway improvement	\$41,000	\$26,000
• signing and striping plus moderate roadway improvement	\$153,000	\$95,000
• signing and striping plus major roadway improvement	\$300,000	\$187,000
Class I Bike Path		
• construct asphalt path on graded right of way with drainage and new sub-base	\$500,000	\$310,800
Notes: ¹ Minor, moderate, and major designations correspond to the designations used to classify roadways in the existing facilities inventory.		

The application of specific unit costs to proposed projects is based on information from the existing conditions inventory and topological information provided by the City. The Consultant conducted an on-site inventory of the proposed bikeways and classified each according to the relative level of improvement (i.e., cost) to add four-foot shoulders to the existing roadways. The three levels of improvement classification included minor, moderate, and major, which correspond to the cost designations in Table 7. This approach results in unit costs for Class III bike routes that may include

some roadway widening. Although Class III bike routes only require signing, it is recommended that the roadways designated for these routes be widened to provide a minimum shoulder width of three feet if they do not exist already.

Conceptual construction cost estimates were developed for each route segment reflecting the level of improvement needed from Table 7. A summary of total system costs by facility type is presented in Table 8. Conceptual construction cost estimates for individual route segments are provided in Appendix A.

Table 8 Conceptual Construction Cost Estimate Summary	
Bikeway Classification	Cost
Class I Bike Path	\$6,390,500
Class II Bike Lane	\$1,526,400
Class III Bike Route	\$4,700
Total	\$ 7,921,600

Table 8 shows a total cost for constructing the proposed system of approximately \$8,000,000. Many funding opportunities exist at the federal, state, and local levels for constructing bikeway facilities. A general description of these sources is provided below. More detailed funding information can be reviewed in the *Guide to Bicycle Program Funding in California*, Planning and Conservation League, April 1995.

GRADE CROSSING CONSTRAINTS

The proposed system has identified five locations that entail special grade crossing considerations. These locations include the Class I bike path interface with Joiner Parkway north of Moore Road, State Highway 65 north of Ferrari Ranch Road, and State Highway 193 east of East Avenue. All three locations will require special design considerations for crossing the ravine.

Exhibit 1 of Appendix C provides various prototype crossing designs including advantages, disadvantages and estimated construction costs. Prototype "A" shows an at-grade design involving only one major roadway approach. This type of interface can be constructed for less than \$100,000. At the other end of the spectrum is a fully grade separated bridge crossing that provides for continuous off-street bikeway facilities with no vehicular conflict. This type of crossing is typically greater than \$500,000. Because the proposed crossings in the City of Lincoln involve either a State Highway or major arterial, the cost to construct grade separated crossings range from \$800,000 to approximately \$2,000,000 per location.

POTENTIAL FUNDING SOURCES

In some cases, portions of the proposed system will be completed as part of future development and road widening and construction projects within the City of Lincoln. For those portions that will rely on other funding mechanisms, the following discussion provides descriptions of the more effective potential funding sources.

FEDERAL SOURCES

Federal funding through the TEA-21 (Transportation Equity Act for the 21st Century) program could provide the bulk of non-local funding. For the City of Lincoln, applicable TEA-21 programs include the programs listed below. A complete listing of federal and state funding programs is included as Appendix D.

- Surface Transportation Program (STP);
- Transportation Enhancement Activities (TEAs);
- Bicycle Transportation and Pedestrian Walkways Program;
- Recreational Trails Program;
- Job Access and Reverse Commute Grants;
- Transit Enhancement Activity Program; and
- Congestion Mitigation/Air Quality Program (CMAQ).

TEA-21 funding is administered through the state and regional governments. For the Sacramento Region, this is SACOG. Most of the funding programs are transportation versus recreation oriented, with an emphasis on (a) reducing auto trips and (b) providing an intermodal connection. Funding criteria includes completion and adoption of a Bikeway Master Plan and quantification of the costs and benefits of the system, proof of public involvement and support, CEQA compliance, and commitment of local resources. In most cases, TEA-21 provides matching grants of 80 to 90 percent. Other federal funding sources include the following:

STATE SOURCES

The following state sources provide funding that is applicable to bikeway funding for the City of Lincoln.

BICYCLE TRANSPORTATION ACCOUNT

The State Bicycle Transportation Account (BTA) is an annual program that is available for funding bicycle projects. Available as grants to local jurisdictions, the emphasis is on projects which benefit bicycling for commuting purposes. Funding for this program was recently increased from \$360,000 annually to approximately \$7,000,000 annually by 2003 due to the passage of Assembly Bill 1020.

LOCAL TRANSPORTATION FUND (LTF)

Under Article 3 of the Transportation Development Act (TDA), up to two percent of the LTF allocation to cities and counties can be used for bicycle and pedestrian projects. Revenues to the LTF program are derived from ¼ cents of the statewide sales tax.

ENVIRONMENTAL ENHANCEMENT AND MITIGATION PROGRAM (EEM)

Bicycle projects can qualify for EEM funds if they meet the program's requirements. Any non-profit organization can sponsor projects, which are submitted to the State Resources Agency for evaluation in June/July of each year.

ASSEMBLY BILL 1475 - SAFE ROUTES TO SCHOOL BILL

This bill redefines transportation safety in California by investing \$20 million per year in bike lanes, bicycle and walking trails, new sidewalks and traffic-calming projects near California schools. The first round of project solicitation has been completed. A second round is underway with applications due by June 2001. It is anticipated that this program will continue for future years.

LOCAL SOURCES

A variety of local sources may be available for funding bikeway and pedestrian improvements; however, their use is often dependent on political support.

NEW CONSTRUCTION

Future road widening and construction projects are one means of providing on-street bikeways. To ensure that roadway construction projects provide these facilities where needed, roadway design standards need to include minimum cross-sections that have sufficient pavement for on-street bikeways and the review process for new development should include input pertaining to consistency with the proposed system.

Future development in the City of Lincoln will contribute to the implementation of new bikeway facilities only if projects are conditioned and roadway design standards are updated to include bikeway facilities.

IMPACT FEES

Another potential local source of funding is developer impact fees, which are typically tied to trip generation rates and traffic impacts produced by the proposed development. A developer may reduce the number of trips (and hence impacts and cost) by paying for on-site and offsite bikeway improvements which will encourage residents to bicycle rather than drive.

ASSESSMENT DISTRICTS

Different types of assessment districts can be used to fund the construction and maintenance of bikeway facilities. Examples include Mello-Roos Community Facility Districts, Infrastructure Financing Districts (SB 308), Open Space Districts, or Lighting and Landscape Districts. These types of districts have specific requirements relating to their establishment and use of funds.

OTHER SOURCES

Local sales taxes, developer or public agency land dedications, private donations, and fund-raising events are other local options to generate funding for bikeway projects. Creation of these potential sources usually requires substantial local support.

COST AND FUNDING SUMMARY

In past years, dedicated funds for bikeway facilities have been very limited. The City recently received approval for \$200,000 in CMAQ funds to use toward the construction of a Class I bike path from Lakeside Drive to Joiner Parkway along Nicolaus Road. The proposed project consists of approximately 3,200 feet of Class I bike path within a 21-foot easement on the north side of Nicolaus Road. The project is scheduled for completion in 2001.

Future expenditures for bikeway facilities are difficult to predict due to the ever changing fiscal climate and the number of variables involved in securing funding. It is instructive to consider the total annual amount required to implement the proposed system over a 20-year time frame. Dividing the approximately \$5,500,000 total cost equally over 20 years equates to about \$275,000 per year in 2001 dollars. This amount could increase to approximately \$400,000 if the additional costs of Class I bike path crossings are taken into account. The following actions are recommended to complete the proposed system.

- Prepare joint applications wherever possible, with other local and regional agencies for competitive funding programs at the state and federal levels;
- Actively pursue funding from the BTA and Safe Schools Program to complete priority portions of the proposed system;
- Use existing funding sources as matching funds for state and federal funding; and
- Include proposed bikeways wherever possible as part of roadway projects involving widening overlays, or other improvements.

VII. IMPLEMENTATION

This section addresses the construction phasing issues related to implementation of the proposed system. It includes guidelines for establishing priorities for implementing specific routes and also provides typical design standards for each bikeway classification.

BIKEWAY SYSTEM PHASING

The specific implementation of any given route or facility, with all other things considered equal, should be based on the following criteria:

- Where an opportunity, such as a road widening or re-paving, makes implementation favorable;
- Where an eminent loss of an opportunity, such as the sale of a railroad right-of-way, makes implementation necessary;
- Where resolution of a major obstacle, such as railroad levees, creeks, or embankments makes implementation necessary; and
- Where the segment is not disconnected or otherwise poorly accessible from the rest of the system.

In many situations, the most needed bikeway improvement may not be implemented first. In these cases, external factors such as new construction create opportunities to provide new bikeway facilities without consideration for need. Therefore, the proposed system does not include a ranking of specific routes, but does include the following list of high priority routes.

PRIORITY ROUTES

Priority routes were selected based on expected use, type of route, connectivity, and potential improvements to safety. The following routes currently have the highest priority for implementation (no priority order).

- East Avenue Class I Bike Path– This facility will extend the existing Class I bike path along East Avenue from 6th Street to 12th Street. The project provides an improved North/South link with connections to an existing Class I bike path south of 7th Street.
- Auburn Ravine Class I Bike Path– This facility will connect Highway 65 and Highway 193 along the Auburn Ravine. Grade separated roadway crossings along this segment include Highway 65, a proposed D Street extension, a proposed multi-use bridge between Ferrari Ranch Road and McBean Park, and Highway 193. The crossing constraints will add additional cost to the proposed project depending on the design and location.

- Class I Bicycle Bridge over Auburn Ravine- A Class I bike path will be proposed on a bridge crossing the Auburn Ravine and the proposed Class I bike path adjacent to Auburn Ravine. This will provide a connection between Ferrari Ranch Road and McBean Park. The crossing constraint will add additional cost to the proposed project depending on the design and location.
- Nicolaus Road Class II Bike Lane- This Class II bike lane will connect O Street to Airport Road (City Limits) along Nicolaus Road.
- 7th Street Class II Bike Lane- This Class II bike lane on 7th Street will connect the proposed Class I bike path on East Avenue to I Street adjacent to the High School.

Detailed descriptions of each priority project including length and estimated cost are provided in Appendix B.

BIKEWAY DESIGN STANDARDS

The Caltrans Highway Design Manual gives extensive detail on the design for bikeways. The Caltrans standards provide a good framework for future implementation, but may not always be feasible due to topographic constraints. Bikeway design and planning standards are continually changing and expanding. For example, there is pressure from the bicycling public to allow bicycle lanes that are narrower than Caltrans Standards to be installed on existing streets. However, local jurisdictions must be protected from liability so most agencies adopt the Caltrans guidelines as a minimum standard. Examples of typical standard design treatments for Class I, Class II, and Class III bikeways are provided in Figures 5 through 7. This information is provided to assist local agency staff in the design and construction of future bikeway facilities. With these standards and other information contained in this update of the City of Lincoln BMP, the city is prepared to take the next step in advancing bikeway projects from the planning stage to the design and construction phase.

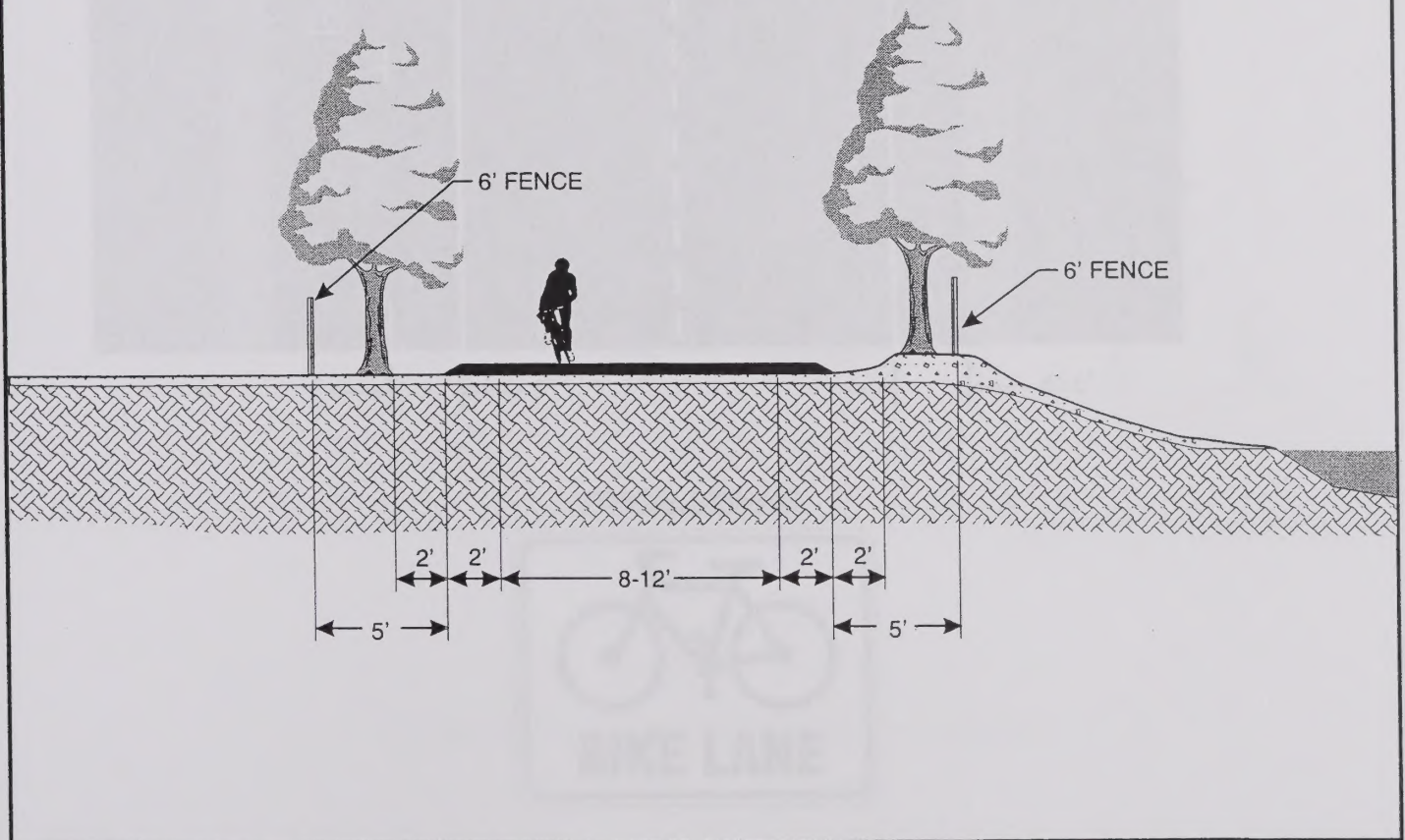
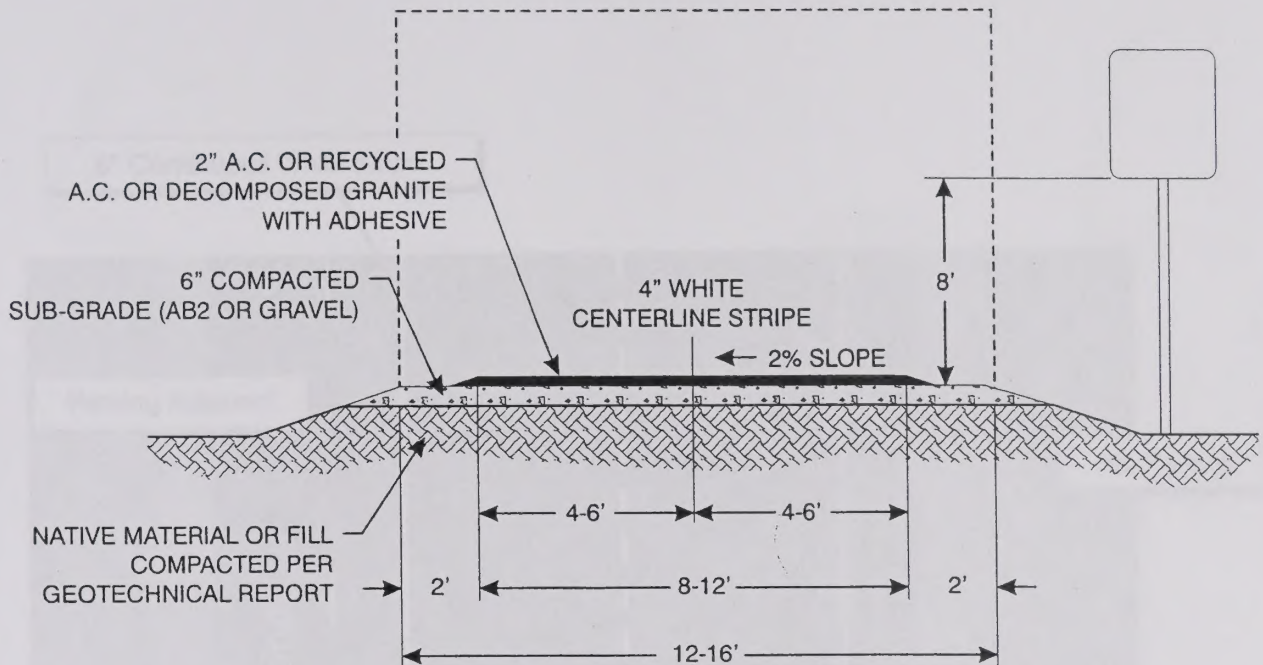
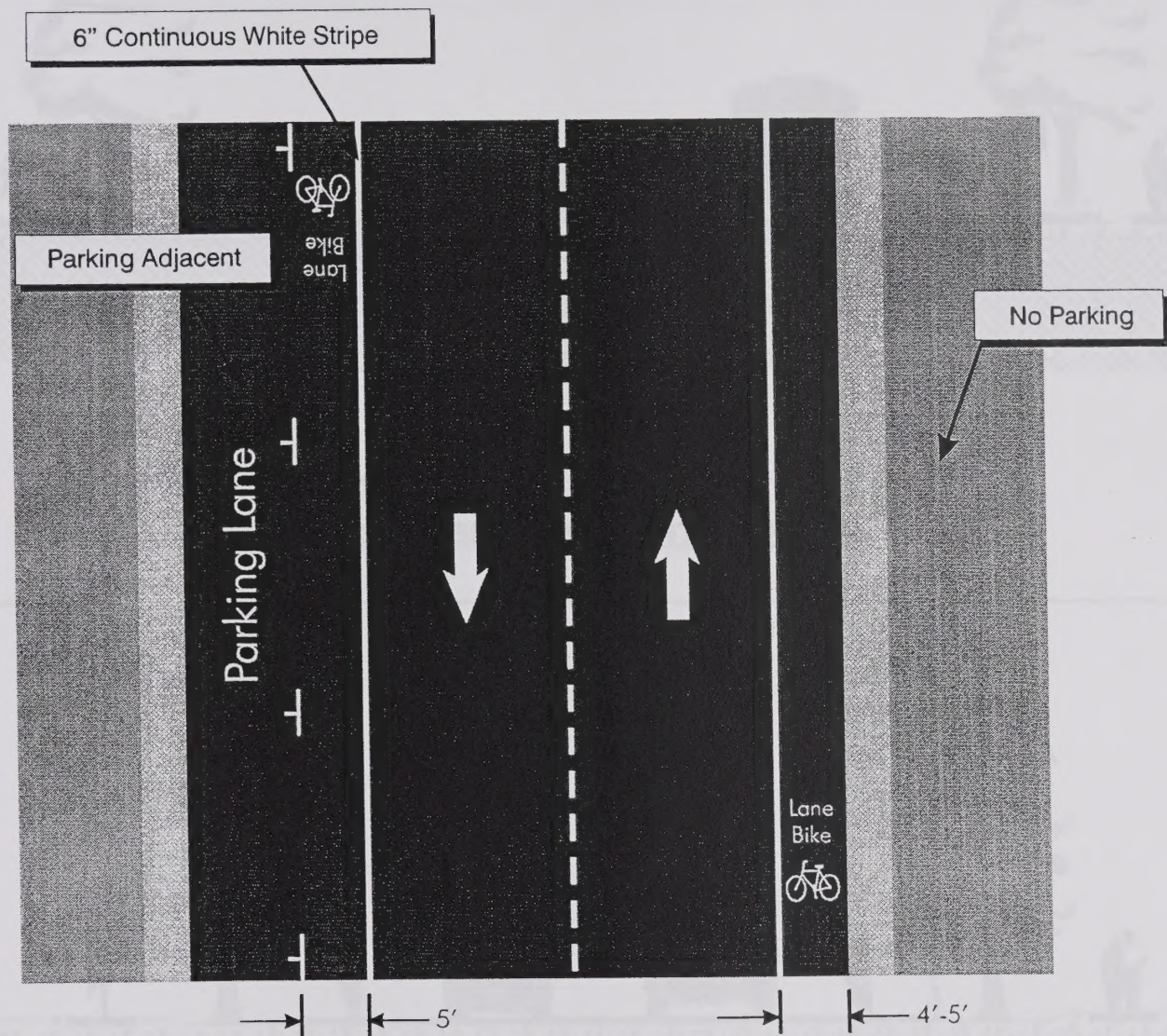


FIGURE 5

TYPICAL CLASS I BIKE PATH

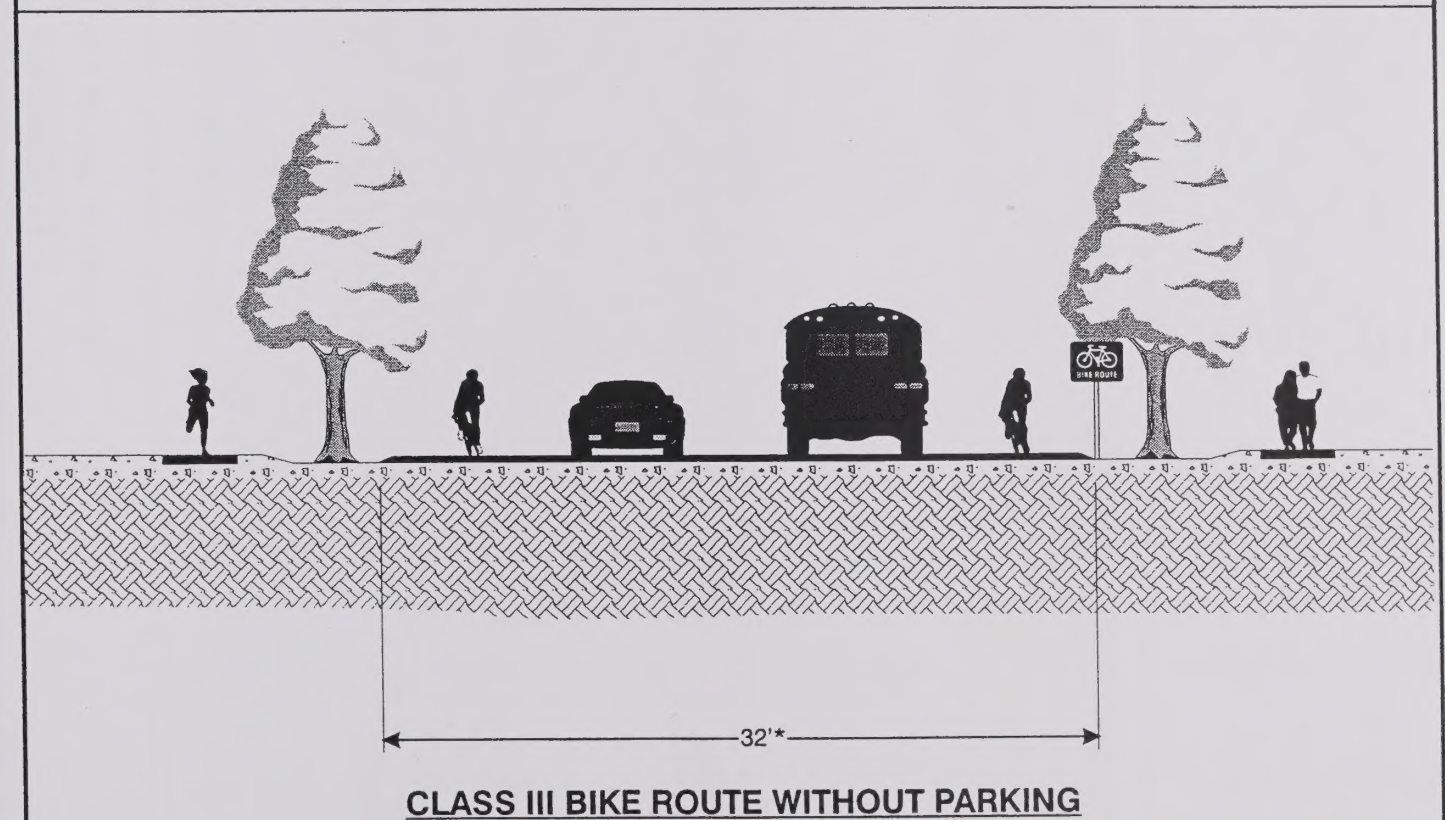
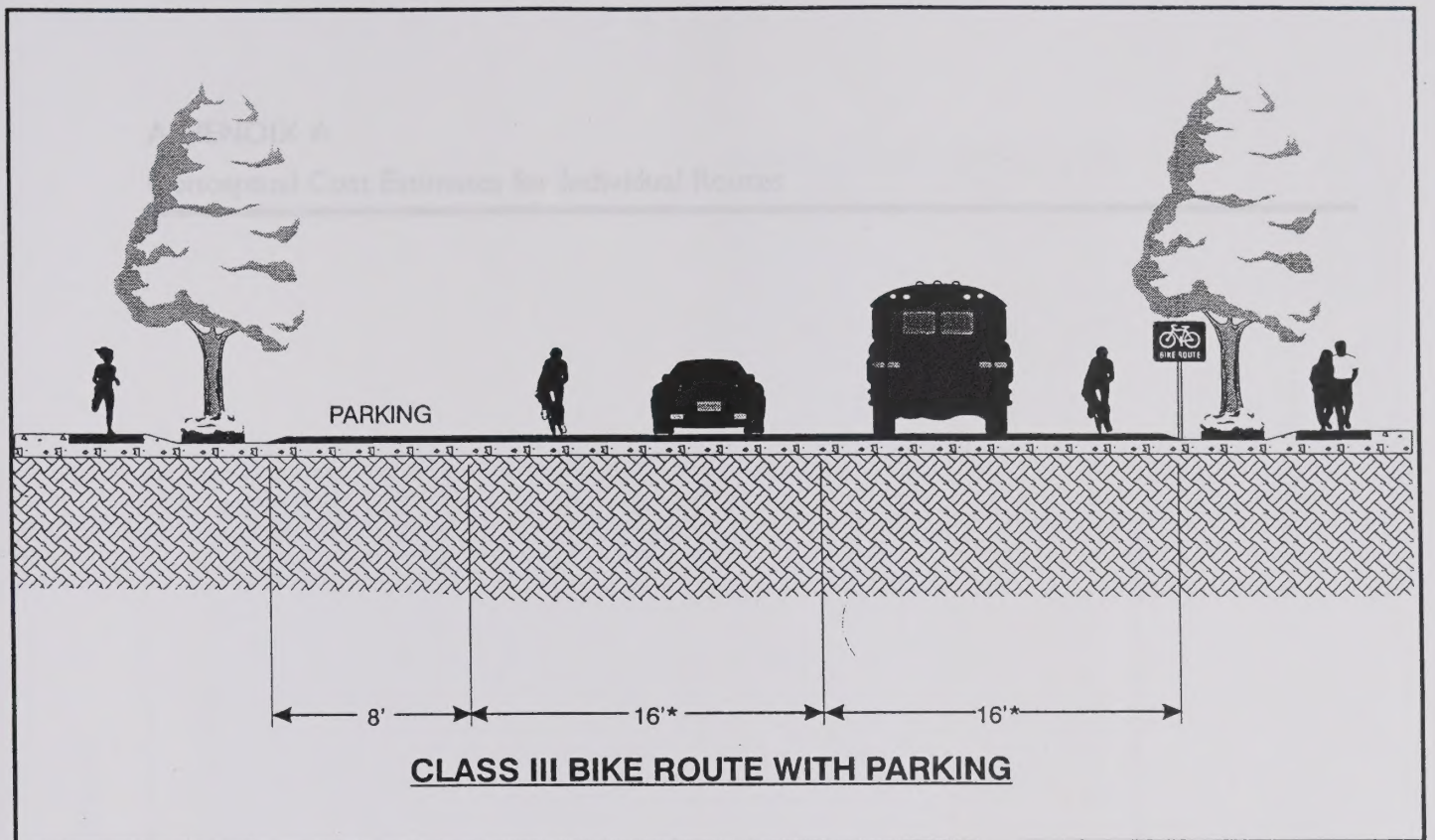


TYPICAL SIGNING



FIGURE 6

TYPICAL CLASS II
BIKE LANES



* Desirable

FIGURE 7

TYPICAL CLASS III BIKE ROUTES

APPENDIX A

Conceptual Cost Estimates for Individual Routes

APPENDIX A
Cityof Lincoln Bikeway Cost Estimate

Existing System

Classification	Distance in Feet	Distance in Miles	Distance in Kilometers	Segment Name	From	To	Segment Marker
E-I	1,000	0.19	0.30	EAST AVENUE	McBEAN PARK DRIVE	6TH STREET	E-I.1
E-II	908	0.17	0.28	JOINER PARKWAY	5TH STREET	6TH STREET	E-II.1
E-II	930	0.18	0.28	JOINER PARKWAY	3RD STREET	5TH STREET	E-II.2
E-II	875	0.17	0.27	JOINER PARKWAY	1ST STREET	3RD STREET	E-II.3
E-II	1,319	0.25	0.40	JOINER PARKWAY	MOORE ROAD	1ST STREET	E-II.4
E-II	1,721	0.33	0.52	1ST STREET	R STREET	JOINER PARKWAY	E-II.5
E-II	1,265	0.24	0.38	1ST STREET	O STREET	R STREET	E-II.6
E-II	3,816	0.72	1.16	1ST STREET	D STREET	O STREET	E-II.7
E-II	2,929	0.55	0.89	DEL WEBB BOULEVARD	ORCHARD CREEK LANE	PLACER GREENS LANE	E-II.8
E-II	978	0.19	0.30	DEL WEBB BOULEVARD	SUN CITY LANE	ORCHARD CREEK LANE	E-II.9
E-II	1,105	0.21	0.33	DEL WEBB BOULEVARD	ROCKY RIDGE LANE	SUN CITY LANE	E-II.10
E-II	1,032	0.20	0.31	DEL WEBB BOULEVARD	ROCK CREEK LANE	ROCKY RIDGE LANE	E-II.11
E-II	1,020	0.19	0.31	DEL WEBB BOULEVARD	STREET 27A	ROCK CREEK LANE	E-II.12
E-II	2,051	0.39	0.62	DEL WEBB BOULEVARD	ROSE BOUQUET LANE	STREET 27A	E-II.13
E-II	4,266	0.81	1.29	LINCOLN PARKWAY	DEL WEBB BOULEVARD	C STREET	E-II.14
E-II	1,808	0.34	0.55	LINCOLN PARKWAY	C STREET	C STREET	E-II.15
E-II	1,584	0.30	0.48	LINCOLN PARKWAY	NONE	DEL WEBB BOULEVARD	E-II.16
E-II	1,295	0.25	0.39	LINCOLN PARKWAY	C STREET	TWELVE BRIDGES DRIVE	E-II.17
E-II	4,327	0.82	1.31	PLACER GREEN LANE	DEL WEBB BOULEVARD	FERRARI RANCH ROAD	E-II.18
E-II	1,539	0.29	0.47	NONE	HWY-65	LINCOLN PARKWAY	E-II.19
E-II	1,463	0.28	0.44	D STREET	McBEAN PARK DRIVE	1ST STREET	E-II.20
E-II	1,098	0.21	0.33	JOINER PARKWAY	6TH STREET	NICOLAUS ROAD	E-II.21
E-II	2,492	0.47	0.76	DEL WEBB BOULEVARD	STREET 39A	ROSE BOUQUET LANE	E-II.22

Proposed System

Classification	Distance in	Distance in	Distance in	Segment Name	From	To	Segment	Construction Cost			
	Feet	Miles	Kilometers				Marker	Per Mile*	Total Cost		
P-I	2,360	0.45	0.72	NA	DOUGLAS ROAD	JOINER PARKWAY	P-I.1	\$	500,000	\$	223,500
P-I	4,890	0.93	1.48	NA	WASTEWATER TREATMENT PLT	FUTURE 1ST STREET	P-I.2	\$	500,000	\$	463,100
P-I	3,272	0.62	0.99	NICOLAUS ROAD	TEAL HOLLOW DRIVE SOUTH	AVIATION BOULEVARD	P-I.3	\$	500,000	\$	309,800
P-I	4,943	0.94	1.50	AUBURN RAVINE TRAIL	HWY-65	HWY-193	P-I.4	\$	500,000	\$	468,100
P-I	7,375	1.40	2.23	AUBURN RAVINE TRAIL	HWY-193	SPHERE OF INFLUENCE	P-I.5	\$	500,000	\$	698,400
P-I	1,309	0.25	0.40	NICOLAUS ROAD	LAKESIDE DRIVE	TEAL HOLLOW DRIVE SOUTH	P-I.6	\$	500,000	\$	124,000
P-I	5,451	1.03	1.65	MOORE ROAD	JOINER PARKWAY	HWY-65	P-I.7	\$	500,000	\$	516,200
P-I	1,096	0.21	0.33	NA	FERRARI RANCH ROAD	MCBEAN PARK	P-I.8	\$	500,000	\$	103,800
P-I	1,975	0.37	0.60	WASTEWATER TREATMENT PLN	NICOLAUS ROAD	NICOLAUS ROAD	P-I.9	\$	500,000	\$	187,000
P-I	3,100	0.59	0.94	NICOLAUS ROAD	JOINER PARKWAY	LAKESIDE DRIVE	P-I.10	\$	500,000	\$	293,600
P-I	2,868	0.54	0.87	EAST AVENUE	6TH STREET	12 STREET	P-I.11	\$	500,000	\$	271,600
P-I	3,063	0.58	0.93	DOUGLAS ROAD	FUTURE 1ST STREET	DOUGLAS ROAD	P-I.12	\$	500,000	\$	290,100
P-I	4,074	0.77	1.23	JOINER PARK	O STREET	Q STREET	P-I.13	\$	500,000	\$	385,800
P-I	9,500	1.80	2.88	AUBURN RAVINE TRAIL	VIRGINIATOWN ROAD	SPHERE OF INFLUENCE	P-I.14	\$	500,000	\$	899,600
P-I	12,206	2.31	3.70	AUBURN RAVINE TRAIL	JOINER PARKWAY	SPHERE OF INFLUENCE	P-I.15	\$	500,000	\$	1,155,900
P-II	1,713	0.32	0.52	LINCOLN PARKWAY	WESTWOOD BOULEVARD	HWY-65	P-II.1	\$	5,000	\$	1,600
P-II	3,480	0.66	1.05	WISE ROAD	AVIATION BOULEVARD	AIRPORT ROAD	P-II.2	\$	153,000	\$	100,800
P-II	10,642	2.02	3.22	AIRPORT ROAD	WISE ROAD	NICOLAUS ROAD	P-II.3	\$	153,000	\$	308,400
P-II	5,260	1.00	1.59	NICOLAUS ROAD	AIRPORT DRIVE	AVIATION BOULEVARD	P-II.4	\$	153,000	\$	152,400
P-II	663	0.13	0.20	McCOURTNEY ROAD	VIRGINIATOWN ROAD	CITY LIMITS	P-II.5	\$	153,000	\$	19,200
P-II	1,434	0.27	0.43	VIRGINIATOWN ROAD	LIBERTY LANE	HARRISON AVENUE	P-II.6	\$	153,000	\$	41,600
P-II	2,148	0.41	0.65	HWY 65	7TH STREET	GLADDING ROAD	P-II.7	\$	153,000	\$	62,200
P-II	4,975	0.94	1.51	3RD STREET	JOINER PARKWAY	CITY LIMITS	P-II.8	\$	5,000	\$	4,700
P-II	2,940	0.56	0.89	3RD STREET	O STREET	JOINER PARKWAY	P-II.9	\$	5,000	\$	2,800
P-II	4,199	0.80	1.27	LINCOLN PARKWAY	MOORE ROAD	WESTWOOD BOULEVARD	P-II.10	\$	5,000	\$	4,000
P-II	3,277	0.62	0.99	WESTWOOD BOULEVARD	LINCOLN PARKWAY	HWY-65	P-II.11	\$	5,000	\$	3,100
P-II	2,594	0.49	0.79	HWY-65	WESTWOOD BOULEVARD	1ST STREET	P-II.12	\$	300,000	\$	147,400
P-II	2,084	0.39	0.63	HWY-65	LINCOLN PARKWAY	WESTWOOD BOULEVARD	P-II.13	\$	41,000	\$	16,200
P-II	6,420	1.22	1.95	INDUSTRIAL AVENUE	TWELVE BRIDGES DRIVE	LINCOLN PARKWAY	P-II.14	\$	153,000	\$	186,000
P-II	1,099	0.21	0.33	HWY-193	EAST AVENUE	FERRARI RANCH ROAD	P-II.15	\$	300,000	\$	62,400
P-II	3,770	0.71	1.14	HWY-193	FERRARI RANCH ROAD	CITY LIMITS	P-II.16	\$	5,000	\$	3,600
P-II	2,308	0.44	0.70	FERRARI RANCH ROAD	SUN CITY LANE	HWY-193	P-II.17	\$	5,000	\$	2,200
P-II	1,713	0.32	0.52	FERRARI RANCH ROAD	PLACER GREEN LANE	SUN CITY LANE	P-II.18	\$	5,000	\$	1,600
P-II	971	0.18	0.29	SIERRA COLLEGE BOULEVARD	TWELVE BRIDGES DRIVE	CITY LIMITS	P-II.19	\$	5,000	\$	900
P-II	1,164	0.22	0.35	LINCOLN HILLS BOULEVARD	STREET 19A	DEL WEBB BOULEVARD	P-II.20	\$	5,000	\$	1,100
P-II	1,285	0.24	0.39	LINCOLN HILLS BOULEVARD	STREET 19B	STREET 19A	P-II.21	\$	5,000	\$	1,200
P-II	1,295	0.25	0.39	LINCOLN HILLS BOULEVARD	STREET 22A	STREET 19B	P-II.22	\$	5,000	\$	1,200
P-II	2,039	0.39	0.62	LINCOLN HILLS BOULEVARD	TWELVE BRIDGES DRIVE	STREET 22A	P-II.23	\$	5,000	\$	1,900
P-II	11,226	2.13	3.40	TWELVE BRIDGES DRIVE	STREET D	LINCOLN HILLS BOULEVARD	P-II.24	\$	5,000	\$	10,600
P-II	2,392	0.45	0.72	TWELVE BRIDGES DRIVE	STREET 38A	STREET D	P-II.25	\$	5,000	\$	2,300
P-II	2,358	0.45	0.71	TWELVE BRIDGES DRIVE	LINCOLN PARKWAY	STREET 38A	P-II.26	\$	5,000	\$	2,200
P-II	738	0.14	0.22	STREET B	STREET 39A	LINCOLN PARKWAY	P-II.27	\$	5,000	\$	700
P-II	1,609	0.30	0.49	STREET B	LINCOLN PARKWAY	STREET A	P-II.28	\$	5,000	\$	1,500
P-II	1,653	0.31	0.50	STREET A	TWELVE BRIDGES DRIVE	STREET B	P-II.29	\$	5,000	\$	1,600
P-II	1,811	0.34	0.55	TWELVE BRIDGES DRIVE	STREET A	LINCOLN PARKWAY	P-II.30	\$	5,000	\$	1,700
P-II	2,099	0.40	0.64	LINCOLN PARKWAY	STREET A	TWELVE BRIDGES DRIVE	P-II.31	\$	5,000	\$	2,000
P-II	2,785	0.53	0.84	AVIATION BOULEVARD	CITY LIMITS	VENTURE DRIVE	P-II.32	\$	41,000	\$	21,600
P-II	2,250	0.43	0.68	VENTURE DRIVE	TEAL HOLLOW DRIVE NORTH	LAKESIDE DRIVE	P-II.33	\$	5,000	\$	2,100
P-II	4,126	0.78	1.25	LAKESIDE DRIVE	VENTURE DRIVE	NICOLAUS DRIVE	P-II.34	\$	5,000	\$	3,900
P-II	2,543	0.48	0.77	AVIATION BOULEVARD	NICOLAUS ROAD	VENTURE DRIVE	P-II.35	\$	5,000	\$	2,400
P-II	3,330	0.63	1.01	NICOLAUS ROAD	TEAL HOLLOW DRIVE SOUTH	AVIATION BOULEVARD	P-II.36	\$	41,000	\$	25,900
P-II	1,289	0.24	0.39	NICOLAUS ROAD	LAKESIDE DRIVE	TEAL HOLLOW DRIVE SOUTH	P-II.37	\$	41,000	\$	10,000
P-II	3,214	0.61	0.97	NICOLAUS ROAD	JOINER PARKWAY	LAKESIDE DRIVE	P-II.38	\$	41,000	\$	25,000
P-II	2,750	0.52	0.83	NICOLAUS ROAD	H STREET	JOINER PARKWAY	P-II.39	\$	5,000	\$	2,600
P-II	2,614	0.50	0.79	VENTURE DRIVE	AVIATION BOULEVARD	TEAL HOLLOW DRIVE NORTH	P-II.40	\$	5,000	\$	2,500
P-II	4,164	0.79	1.26	INDUSTRIAL AVENUE	CITY LIMITS	TWELVE BRIDGES DRIVE	P-II.41	\$	153,000	\$	120,700
P-II	2,421	0.46	0.73	GLADDING ROAD	HWY 65	CITY LIMITS	P-II.42	\$	153,000	\$	70,200
P-II	2,033	0.39	0.62	FERRARI RANCH ROAD	HWY-65	PLACER GREEN LANE	P-II.43	\$	5,000	\$	1,900
P-II	1,008	0.19	0.31	LINCOLN PARKWAY	HWY-65	NA	P-II.44	\$	5,000	\$	1,000
P-II	2,920	0.55	0.88	LINCOLN PARKWAY	CITY LIMITS	STREET A	P-II.45	\$	5,000	\$	2,800
P-II	1,300	0.25	0.39	VIRGINIATOWN ROAD	HARRISON AVENUE	EAST AVENUE	P-II.46	\$	41,000	\$	10,100
P-II	1,424	0.27	0.43	D STREET	4TH STREET	7TH STREET	P-II.47	\$	5,000	\$	1,300
P-II	3,924	0.74	1.19	O STREET	1ST STREET	NICOLAUS ROAD	P-II.48	\$	5,000	\$	3,700
P-II	3,832	0.73	1.16	1ST STREET	FULLER DRIVE	CITY LIMITS	P-II.49	\$	5,000	\$	3,600
P-II	3,814	0.72	1.16	3RD STREET	D STREET	O STREET	P-II.50	\$	5,000	\$	3,600
P-II	3,571	0.68	1.08	7TH STREET	EAST AVENUE	LINCOLN UNION HIGH SCHOOL	P-II.51	\$	5,000	\$	3,400
P-II	6,175	1.17	1.87	JOINER PARKWAY	NICOLAUS ROAD	LAKESIDE DRIVE	P-II.52	\$	5,000	\$	5,800
P-II	5,849	1.11	1.77	AVIATION BOULEVARD	CITY LIMITS	WISE ROAD	P-II.53	\$	5,000	\$	5,500
P-II	1,324	0.25	0.40	DEL WEBB BOULEVARD	LINCOLN PARKWAY	PLACER GREEN LANE	P-II.54	\$	5,000	\$	1,300
P-II	4,502	0.85	1.36	TWELVE BRIDGES DRIVE	INDUSTRIAL AVENUE	STREET A	P-II.55	\$	5,000	\$	4,300
P-II	1,886	0.36	0.57	STREET A	LINCOLN PARKWAY	TWELVE BRIDGES DRIVE	P-II.56	\$	5,000	\$	1,800
P-II	5,328	1.01	1.61	STREET C	STREET A	LINCOLN PARKWAY	P-II.57	\$	5,000	\$	5,000
P-II	6,153	1.17	1.86	STREET D	CITY LIMITS	TWELVE BRIDGES DRIVE	P-II.58	\$	5,000	\$	5,800
P-II	6,636	1.26	2.01	TWELVE BRIDGES DRIVE	SIERRA COLLEGE BOULEVARD	LINCOLN HILLS BOULEVARD	P-II.59	\$	5,000	\$	6,300
P-II	6,496	1.23	1.97	WESTWOOD BOULEVARD	CITY LIMITS	LINCOLN PARKWAY	P-II.60	\$	5,000	\$	6,200
P-II	1,313	0.25	0.40	THERESA LANE	EAST 9TH STREET	VIRGINIATOWN ROAD	P-II.61	\$	5,000	\$	1,200
P-II	2,370	0.45	0.72	4TH STREET	G STREET	EAST AVENUE	P-II.62	\$	5,000	\$	2,200
P-II	2,673	0.51	0.81	NA	LINCOLN PARKWAY	WESTWOOD BOULEVARD	P-II.63	\$	5,000	\$	2,500
P-II	2,510	0.48	0.76	NA	O STREET	NA	P-II.64	\$	5,000	\$	2,400
P-II	2,265	0.43	0.69	NICOLAUS ROAD	H STREET	D STREET	P-II.65	\$	5,000	\$	2,100
P-II	6,947	1.32	2.11	SUN CITY LANE	DEL WEBB BOULEVARD	FERRARI RANCH ROAD	P-II.66	\$	5,000	\$	6,600
P-III	1,495	0.28	0.45	6TH STREET	R STREET	JOINER PARKWAY	P-III.1	\$	1,000	\$	300
P-III	10,469	1.98	3.17	5TH STREET	EAST AVENUE	CHAMBERS DRIVE	P-III.2	\$	1,000	\$	2,000
P-III	3,390	0.64	1.03	NA	R STREET	NICOLAUS ROAD	P-III.3	\$	1,000	\$	600
P-III	2,927	0.55	0.89	H STREET	1ST STREET	7TH STREET	P-III.4	\$	1,000	\$	600
P-III	1,981	0.38	0.60	L STREET	5TH STREET	9TH STREET	P-III.5	\$	1,000	\$	400
P-III	2,475	0.47	0.75	R STREET	1ST STREET	6TH STREET	P-III.6	\$	1,000	\$	500
P-III	1,813	0.34	0.55	CHAMBERS DRIVE	1ST STREET	CREEK	P-III.7	\$	1,000	\$	300
Total \$ 7,921,600											

* Bikeway segment construction cost estimates based on topographic information provided by the City of Lincoln and field surveys conducted by Fehr & Peers Associates. See Table 7

Existing System

	E-I	E-II	E-III	Total
Feet	1,000	39,821	0.0	40,821
Miles	0.19	7.54	0.0	7.73
Kilometers	0.30	12.07	0.0	12.37

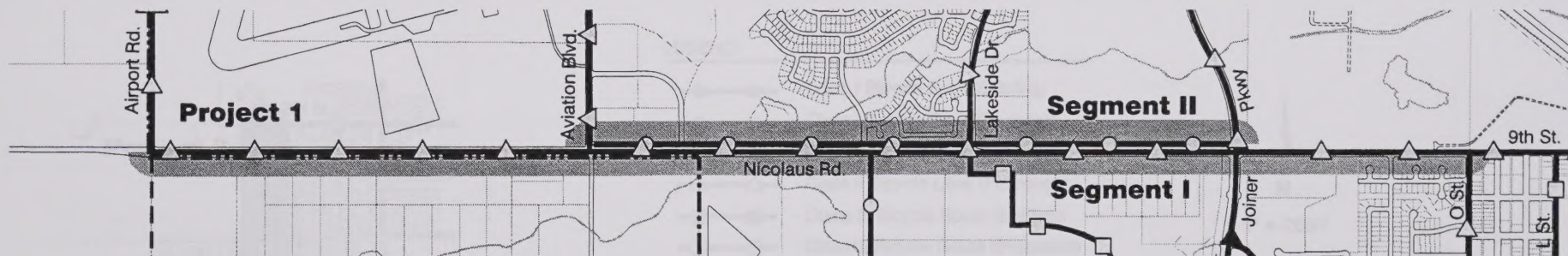
Proposed System

	P-I	P-II	P-III	Total
Feet	45,776	209,098	24,550	279,424
Miles	8.67	39.60	4.65	52.92
Kilometers	13.87	63.36	7.44	84.67

Legend

Class I Facility	
Class II Facility	
Class III Facility	

Priority Route Project Descriptions



LEGEND

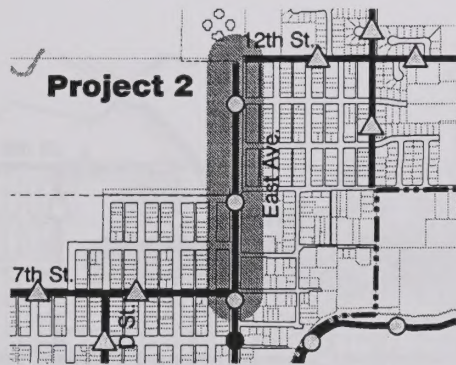
- - Class I Bicycle Path (Existing)
- - Class I Bicycle Path (Proposed)
- ▲—▲ - Class II Bicycle Lane (Existing)
- △—△ - Class II Bicycle Lane (Proposed)
- - Class III Bicycle Route (Existing)
- - Class III Bicycle Route (Proposed)

N
1" = 2000'

NOTES:

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- (2) The final designation of bikeways on this map may change when detailed technical analysis is developed for individual projects as they advance to implementation.

SEGMENT	CLASS	LENGTH (km)	ESTIMATED COST	DESCRIPTION
1	II	4.82	\$251,800	New Class II Bike Route on Nicolaus Rd. between O St. and Airport Rd. This project provides an improved link between the newly developed residential uses to the existing developed areas of Lincoln.
2	I	2.33	\$433,800	New Class I Bike Lane on the north side of Nicolaus Rd between Joiner Parkway and Aviation Blvd. This project provides an important recreational facility that connects residential uses to other developed means of Lincoln.



LEGEND

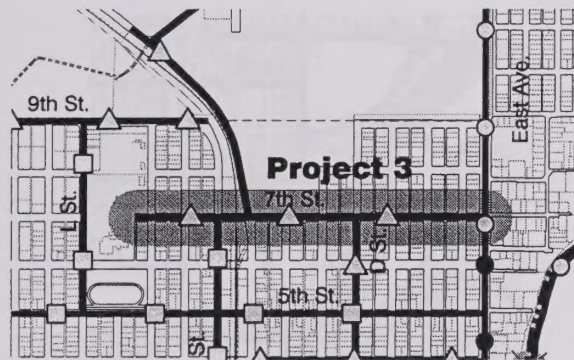
- - Class I Bicycle Path (Existing)
- - Class I Bicycle Path (Proposed)
- ▲— - Class II Bicycle Lane (Existing)
- △— - Class II Bicycle Lane (Proposed)
- - Class III Bicycle Route (Existing)
- - Class III Bicycle Route (Proposed)



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SEGMENT	CLASS	LENGTH (km)	ESTIMATED COST	DESCRIPTION
1	I	.86	\$268,750	New Class I Bike Path on East Ave between 12th St. and 7th St. This project provides an improved North/South link with connections to an existing Class I Bike Path south of 7th St.



LEGEND

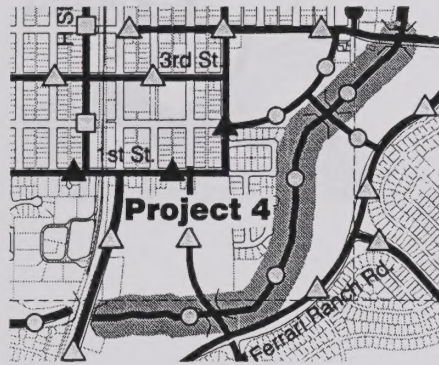
- - Class I Bicycle Path (Existing)
- - Class I Bicycle Path (Proposed)
- ▲—▲ - Class II Bicycle Lane (Existing)
- △—△ - Class II Bicycle Lane (Proposed)
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- - Class III Bicycle Route (Proposed)



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SEGMENT	CLASS	LENGTH (km)	ESTIMATED COST	DESCRIPTION
1	III	1.09	\$1,100	New Class III Bike Route on 7th St between Lincoln Union High School and East Ave. This project provides an important link to an existing Class I Bike Path on East Ave. and connectivity to the High School.



LEGEND

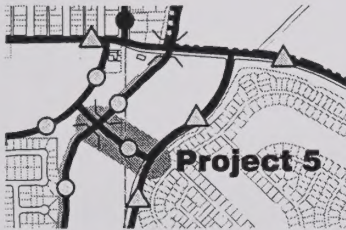
- - Class I Bicycle Path (Existing)
- - Class I Bicycle Path (Proposed)
- ▲—▲ - Class II Bicycle Lane (Existing)
- △—△ - Class II Bicycle Lane (Proposed)
- - Class III Bicycle Route (Existing)
- - Class III Bicycle Route (Proposed)



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SEGMENT	CLASS	LENGTH (km)	ESTIMATED COST	DESCRIPTION
1	I	1.50	\$468,100 w/o Crossing on SR 65/SR193*	New Class I Bike Path along Auburn Ravine Creek between State Highway 65 and State Highway 193. This project provides an important safety link between major corridors and will link newly developed areas to the Downtown Core. This project will serve recreational and commute trips for SR 65 and SR193. *Crossing design could add approximately \$1,000,000 to project cost.



LEGEND

- Class I Bicycle Path (Existing)
- Class I Bicycle Path (Proposed)
- Class II Bicycle Lane (Existing)
- Class II Bicycle Lane (Proposed)
- Class III Bicycle Route (Existing)
- Class III Bicycle Route (Proposed)



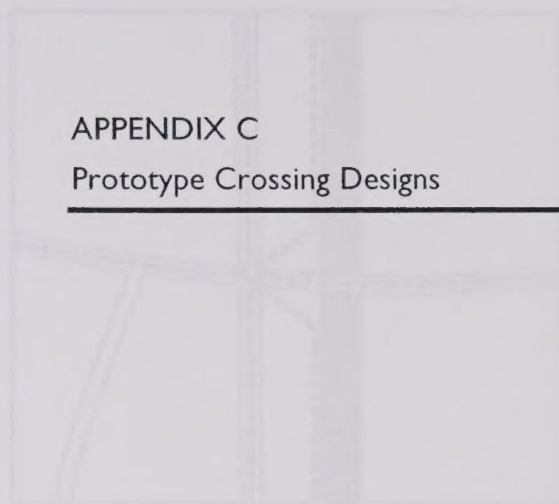
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SEGMENT	CLASS	LENGTH (km)	ESTIMATED COST	DESCRIPTION
1	I	.33	\$103,800*	New Class I Bike Path connecting Ferrari Ranch Rd to proposed Class I Bike Path across Auburn Ravine Creek. This project will provide a recreational link from Del Webb Sun City Lincoln Hills to the Downtown Core. *Cost could double depending on crossing design for Auburn Ravine Creek and adjacent proposed Class I facility.

APPENDIX C

Prototype Crossing Designs



PROTOTYPE 'A'



PROTOTYPE 'B'



PROTOTYPE 'C'

ADVANTAGES	DISADVANTAGES
• Lowest Cost Option • Simple Profile • No Conflicts with Vehicles • No Impact on Infrastructure	• Potential for High Construction and Maintenance Cost • Potential for Conflicts in Areas with High Rail/Highway Traffic • Potential for Safety Issues • May Require More Land • May Require More Right-of-Way • May Require More Right-of-Way

Prototype 'A' is a simple at-grade crossing.



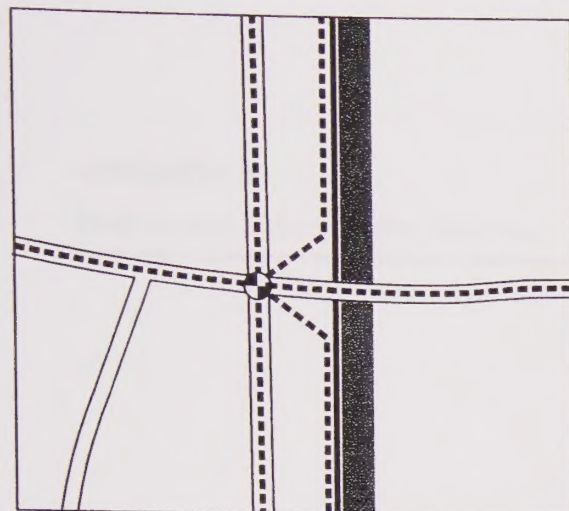
Cross Section A-C

ADVANTAGES	DISADVANTAGES
• Lowest Cost Option • Simple Profile • No Conflicts with Vehicles • No Impact on Infrastructure	• Potential for High Construction and Maintenance Cost • Potential for Conflicts in Areas with High Rail/Highway Traffic • Potential for Safety Issues • May Require More Land • May Require More Right-of-Way • May Require More Right-of-Way

Prototype 'B' is a simple at-grade crossing.



Cross Section B-C



PROTOTYPE "A"

ADVANTAGES	DISADVANTAGES
- Bikeway Crossing Location is Easy to Identify - Low Cost - Only Requires Crossing One Major Roadway Approach	- Increases Delay for Vehicles at Intersection - Discontinuous Off-Street Bikeway Facility - Increases Conflicts between Vehicles, Pedestrians, and Bicycles

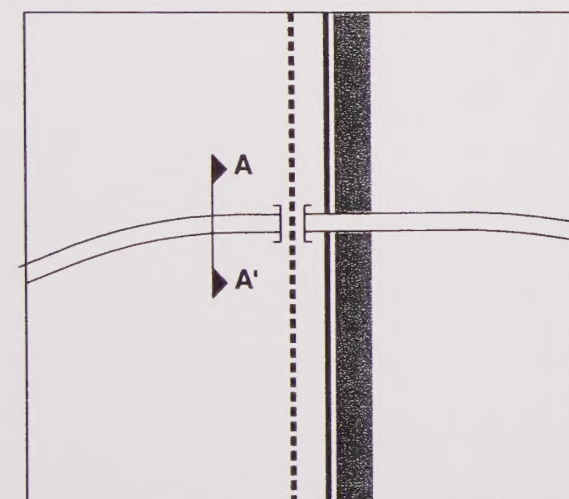
Construction Cost = <\$100,000/Location



PROTOTYPE "B"

ADVANTAGES	DISADVANTAGES
- Low to Moderate Cost	- Increases Delay for Vehicles at Intersection - Discontinuous Off-Street Bikeway Facility - Increases Conflicts between Vehicles, Pedestrians, and Bicycles - May Discourage Less Experienced Bicyclists - Requires Multiple Roadway Crossings - Bikeway Crossing Locations are More Difficult to Identify

Construction Cost = <\$250,000/Location



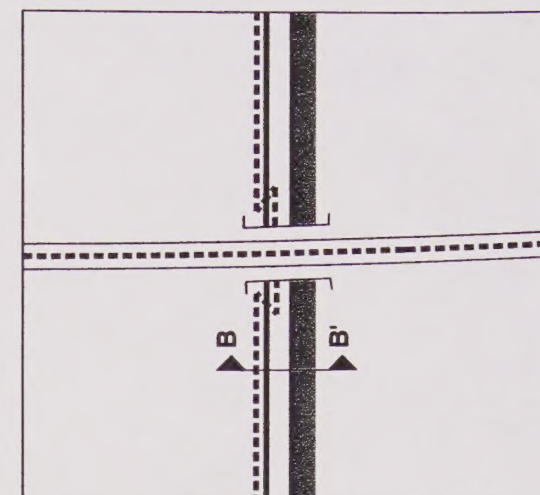
PROTOTYPE "C"

ADVANTAGES	DISADVANTAGES
- Continuous Off-Street Bikeway Facility - No Conflicts with Vehicles - No Impact to Intersection Operations - May Encourage Use by Less Experienced Bicyclists	- Moderate to High Cost - Bridge May Not Be Consistent with Aesthetic Standards of Community

Construction Cost = >\$500,000/Location



Cross Section A-A'



PROTOTYPE "D"

ADVANTAGES	DISADVANTAGES
- Continuous Off-Street Bikeway Facility - No Conflicts with Vehicles - No Impact to Intersection Operations	- Moderate to High Construction and Maintenance Cost - Difficult to Construct in Areas with High Groundwater Table - Potential Safety Concerns Given Limited Visibility of Crossing - May Discourage Some Less Experienced Bicyclists - May Experience Flooding, Which Would Limit Use

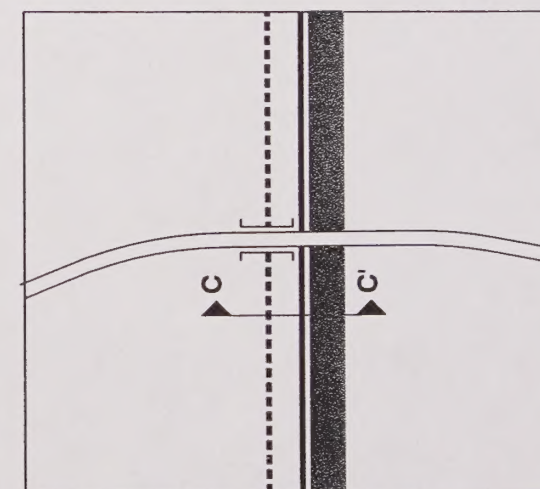
Construction Cost = >\$500,000/Location



Cross Section B-B'

LEGEND

- - - - - Class I Bike Path
- - - - - Class II Bike Lane
- Traffic Signal
- Levee



PROTOTYPE "E"

ADVANTAGES	DISADVANTAGES
- Continuous Off-Street Bikeway Facility - No Conflicts with Vehicles - No Impact to Intersection Operations	- High Cost - Difficult to Construct in Areas with High Groundwater Table - Potential Safety Concerns Given Limited Visibility of Crossing - May Discourage Some Less Experienced Bicyclists

Construction Cost = >\$500,000/Location



Cross Section C-C'

APPENDIX D

Federal and State Funding Sources

APPENDIX D

BICYCLE FUNDING SOURCES

APPENDIX D

BICYCLE FUNDING SOURCES

Name of Funding Program	Transportation Equity Act for the 21st Century (TEA-21)
Funding Type	Federal
Summary Description	TEA-21 provides funding for roads, transit, safety, and environmental enhancements. General state and local improvements for highways and bridges that accommodate all users, including bicyclists, pedestrians, and people with disabilities.
Eligible Applicants	States, counties, transit operators. Special directives may apply with sponsorship from an eligible applicant.
Typical Funding Amounts	Estimated at approximately \$1.15 billion over the next 5 years, an increase of approximately \$80 million over ISTEA legislation.
Regional Matching Funds	A 20% match is required.
Procedure for Project Review and Selection	Selected projects must give a priority of local government. Local government submits project to the County Transportation Commission (CTC) for review and presentation for inclusion in the Regional Transportation Improvement Plan (RTIP). Allocations are then made on the basis of priorities developed by the Regional Transportation Plan (RTP) and local CTC funding policies.
Key Changes in TEA 21	TEA-21 states 25% of new money above 1997 state TE funding is each transferable to other ISTEA programs at the state's discretion.
Contact	SACIA (see list of Contacts)

Name of Funding Program:	Transportation Equity Act for the 21st Century (TEA-21)
Funding Type:	Federal
Summary Description:	TEA-21 provides funding for roads, transit, safety and environmental enhancements. General state and local improvements for highways and bridges that accommodate additional modes of transit. Including, capital costs, publicly owned intercity facilities, and bicycle and pedestrian facilities.
Eligible Applicants:	Cities, counties, transit operators. Special districts may apply with sponsorship from an eligible applicant.
Typical Funding Amounts:	Estimated at approximately \$215 billion over the next 6 years, an increase of approximately \$60 billion over ISTEA legislation.
Required Matching Funds:	A 20% match is required.
Procedure for Project Review and Selection:	Initiated projects must gain support of local government. Local government submits projects to the County Transportation Commission (CTC) for review and prioritization for inclusion in the Regional Transportation Improvement Plan (RTIP). Allocations are then made on the basis of priorities developed by the Regional Transportation Plan (RTP) and local CTC funding policies.
Key Changes in TEA-21:	TEA-21 makes 25% of new money above 1997 state TE funding levels transferable to other ISTEA programs, at the state's discretion.
Contact:	SACOG (refer to List of Contacts)

Name of Funding Program:	Surface Transportation Program Fund (STP) (Section 1108)
Funding Type:	Federal
Summary Description:	The Surface Transportation Program is a block grant fund. Funds are used for roads, bridges, transit capital and pedestrian and bicycle projects including bicycle transportation facilities, bike parking facilities, equipment for transporting bicycles on mass transit facilities, bike activated traffic control devices, preservation of abandoned railway corridors for bicycle and pedestrian trails, and improvements for highways and bridges. TEA-21 allows the transfer of funds from other TEA-21 programs to the STP Fund.
Eligible Applicants:	Cities, counties, transit operators, Caltrans and Metropolitan Planning Organizations. Non-profit organizations and special districts may also apply with sponsorship from an eligible agency.
Typical Funding Amounts:	Approximately \$535 million annually.
Required Matching Funds:	A local match of 20% is required for bicycle and pedestrian projects, 11.5% is required for all other types of projects.
Procedure for Project Review and Selection:	Allocations are made based on priorities developed by SACOG in cooperation with local jurisdictions.
Schedule for Application Availability, Due Date, and Selection Date:	Based on a multi-year project selection process, the dates are pending.
Key Changes in TEA-21:	Sidewalk improvements to comply with the Americans with Disabilities Act are specifically made eligible.
Contact:	SACOG (refer to List of Contacts)

Name of Funding Program:	Transportation Enhancements Program (Section 1201, paragraph 35)
Funding Type:	Federal
Summary Description:	The TE Program is a 10% set aside of the Surface Transportation Program. Projects must have a direct relationship to the intermodal transportation system through function, proximity, or impact. Two Enhancement Activities are specifically bicycle related: (1) provision of facilities for bicyclists and pedestrians, (2) preservation of abandoned railway corridors (including the conversion and use thereof for bicycle or pedestrian trails).
Eligible Applicants:	Local, regional and state public agencies, special districts, non-profit and private organizations. Cities, counties and transit operators must sponsor and administer the proposed projects.
Typical Funding Amounts:	Approximately \$630 million annually.
Required Matching Funds:	A 12% local match is required.
Procedure for Project Review and Selection:	Regional Transportation Agencies recommend candidate TE projects to the California Transportation Commission (CTC). Projects selected by the CTC for TE funding will be amended into the State Transportation Improvement Program (STIP).
Schedule for Application Availability, Due Date, and Selection Date:	The dates are pending.
Key Changes in TEA-21:	Eligible projects now include safety and educational activities for pedestrians and bicyclists, funds for tourist and welcome centers, environmental mitigation to reduce vehicle-caused wildlife mortality while maintaining habitat connectivity, and the establishment of transportation museums.
Contact:	Caltrans Office of Transportation Enhancement Activities

Name of Funding Program:	National Highway System Fund (NHS)
Funding Type:	Federal
Summary Description:	NHS funds are to provide for an interconnected system of principal arterial routes. The programs goal is to provide access to major population centers, international border crossings, transportation systems, meet national defense requirements and serve interstate and interregional travel, which includes access for bicyclists and pedestrians. Facilities must be located and designed pursuant to an overall plan developed by each MPO and State, and incorporated into the RTIP.
Eligible Applicants:	State and local governments.
Typical Funding Amounts:	Approximately \$441 million annually.
Required Matching Funds:	A local or state match of 20% is required.
Procedure for Project Review and Selection:	Initiated projects must gain support of local government. Local government submits projects to the County Transportation Commission (CTC) for review and prioritization for inclusion in the RTIP. Allocations are then made on the basis of priorities developed by the RTP and local CTC funding policies.
Schedule for Application Availability, Due Date, and Selection Date:	Applications are accepted year round, deadlines are pending deliberation.
Key Changes in TEA-21:	NHS funds can now be spent on nonmotorized projects within Interstate corridors. (Section 1202)
Contact:	SACOG (refer to List of Contacts)

Name of Funding Program:	Federal Lands Highway Program Fund
Funding Type:	Federal
Summary Description:	This Discretionary Program provides funding for any kind of transportation project (including pedestrian and bicycle facilities) that are within, provide access to or are adjacent to public lands. Facilities must be located and designed pursuant to an overall plan developed by each MPO and State, and incorporated into the RTIP.
Eligible Applicants:	Local jurisdictions, Caltrans, Bureau of Land Management (BLM), and the National Trail System Program.
Typical Funding Amounts:	Approximately \$150 million per annum rising to \$165 million in FY 2003.
Required Matching Funds:	No match required.
Procedure for Project Review and Selection:	This is a discretionary program, Caltrans applies for the funds on a project-by-project basis. Initiated projects must gain support from an eligible agency. The eligible agency submits the project to Caltrans Local Streets and Roads. The Forest Service, Caltrans, and the Federal Department of Transportation meet annually to discuss proposed projects and later approve specific projects by consensus.
Schedule for Application Availability, Due Date, and Selection Date:	The application deadline is July.
Key Changes in TEA-21:	Increased funding.
Contact:	Caltrans, Division of State and Local Project Development Office of Local Programs (refer to List of Contacts)

Name of Funding Program:	Scenic Byways Program Fund
Funding Type:	Federal
Summary Description:	This program provides funding for the planning, design, and development of a State Scenic Byways Program. Priority is given to designated scenic byways, proposals with specific intent, and projects established under partnerships. Funds may be used for the construction of facilities along the highway for the use of pedestrians and bicyclist, including pedestrian/bicycle access, safety improvements, and rest areas.
Eligible Applicants:	Local government agencies.
Typical Funding Amounts:	Approximately \$10 million annually state-wide.
Required Matching Funds:	A 20% local match is required.
Procedure for Project Review and Selection:	The local jurisdiction, and the MPO must formally support the byway. The local agencies must contact Caltrans district office local representatives, delineate a corridor, hold public hearings and adopt a scenic highway element in their zoning ordinances. Caltrans reviews the proposal. If it is approved, the FHWA allocates the funds.
Schedule for Application Availability, Due Date, and Selection Date:	A call for projects is sent out in February, deadlines dates are pending.
Key Changes in TEA-21:	None
Contact:	California Department of Transportation Division of Planning (refer to List of Contacts)

Name of Funding Program:	Bridge Repair and Replacement Program
Funding Type:	Federal
Summary Description:	Funds are available for bridge rehabilitation and replacement. All bridges are eligible, and on-system bridges are eligible for discretionary funding. When a highway bridge deck is being replaced or rehabilitated with federal funds, the bridge-deck must provide bicycle accommodations, if access is not fully controlled. Bicycles are permitted to operate at each end of the bridge, if it is determined that bicycles can be accommodated at a reasonable cost. Bridge projects must be incorporated into the RTIP.
Eligible Applicants:	City and county agencies, park and recreation districts. All agencies must have a city, county or transit operator as a sponsor.
Typical Funding Amounts:	Approximately \$260 million annually.
Required Matching Funds:	No local match requirements specifically for bicycle accommodations.
Procedure for Project Review and Selection:	Local agencies submit applications to Caltrans to develop a priority list for bridge rehabilitation or replacement. The FHWA determines eligibility of bridges based on a coding system. Bridges must have a deficiency rating of 80 or less for rehabilitation and 50 or less for replacement. Once a year the agencies select two of the worst five local bridges in the State.
Schedule for Application Availability, Due Date, and Selection Date:	Project selection is made in October.
Key Changes in TEA-21:	Increased funding.
Contact:	Caltrans Division of Structures Local Assistance and Programming Branch (refer to List of Contacts)

Name of Funding Program:	National Recreational Trails Fund (Section 1112)
Funding Type:	Federal
Summary Description:	Funds are available for recreational trails for use by bicyclists, pedestrians, and other non-motorized and motorized users. Projects must be consistent with a Statewide Comprehensive Outdoor Recreation Plan (SCORP). Projects include development of urban trail links, maintenance of existing trails, restoration of trails damaged by use, trail facility development, provision of access for people with disabilities, administrative costs, environmental and safety education programs, acquisition of easements, fee simple title for property and construction of new trails. Annual funding begins at \$30 million for FY 1998, it rises to \$40 million for FY 1999 and increases to \$50 million per annum for the remaining years.
Eligible Applicants:	Private individuals or organizations, counties, cities, and other government agencies.
Typical Funding Amounts:	Approximately \$3 million annually.
Required Matching Funds:	The State is required to use a portion of its tax revenue from fuel for off-highway recreation purposes.
Procedure for Project Review and Selection:	Projects must gain support of eligible agencies, eligible agencies then submit applications to the State Recreational Trails Advisory Board which ranks projects according to State-wide criteria.
Schedule for Application Availability, Due Date, and Selection Date:	Applications are due October 1.
Key Changes in TEA-21:	Significant increases in funding.
Contact:	State Department of Parks and Recreation (refer to List of Contacts)

Name of Funding Program:	National Highway Safety Act (Section 402)
Funding Type:	Federal
Summary Description:	The Highway Safety Program is a non-capital safety project grant program under which states may apply for funds for certain approved safety programs and activities. There is a priority list of projects for which an expedited funding mechanism has been developed; bicycle and pedestrian safety programs have been included on this list. Eligible states must adopt a Highway Safety Plan (HSP) reflecting state highway problems. Eligible projects include pedestrian and bicycle safety programs, program implementation, and identification of highway hazards.
Eligible Applicants:	State departments, cities, counties, school and special districts.
Typical Funding Amounts:	Approximately \$150 million per annum rising to \$165 million in FY 2003.
Required Matching Funds:	No match required.
Procedure for Project Review and Selection:	The Office of Traffic Safety (OTS) which administers the program meets with potential applicants on-site to determine feasibility. Eligible applicants are asked to submit a proposal to OTS for approval. The program is approved by the NHTSA/FHWA. Projects related to bicycle safety education and law enforcement would be eligible for NHTSA funds.
Schedule for Application Availability, Due Date, and Selection Date:	The proposal deadline is April 15 th . Applications are accepted year round.
Key Changes in TEA-21:	Increased funding.
Contact:	Office of Traffic Safety (refer to List of Contacts)

Name of Funding Program:	Transit Enhancement Activity (Section 3003)
Funding Type:	Federal
Summary Description:	This brand new program is created with a one percent set-aside of Urban Area Formula transit grants (3007). The funding which could amount to \$50 million per year, can be used for among other things bicycle and pedestrian access to mass transportation, including bicycle storage facilities and installing equipment for transporting bicycles on mass transportation vehicles.
Eligible Applicants:	Pending.
Typical Funding Amounts:	Formula is pending.
Required Matching Funds:	A 5% match required.
Procedure for Project Review and Selection:	Pending
Schedule for Application Availability, Due Date, and Selection Date:	Pending
Key Changes in TEA-21:	This is a brand new program.
Contact:	SACOG (refer to List of Contacts)

Name of Funding Program:	Highway Safety, Research, and Development Fund (Section 2003)
Funding Type:	Federal
Summary Description:	Provides funding for research on all phases of highway safety and traffic conditions. Uses, training and education of highway safety personnel, research fellowships in highway safety, development of improved accident investigation procedures, emergency service plan, and demonstration projects. Projects include improving pedestrian safety through education, police enforcement, and traffic engineering. Projects must be incorporated into the RTIP.
Eligible Applicants:	Cities, counties, and state agencies. Programs are often run by local community traffic safety programs.
Typical Funding Amounts:	
Required Matching Funds:	A local match of 25% is required.
Procedure for Project Review and Selection:	Eligible agencies submit applications to the FHWA/NHTSA. Those related to bicycle safety education and law enforcement would be eligible for NHTSA funds.
Schedule for Application Availability, Due Date, and Selection Date:	Dates are pending.
Key Changes in TEA-21:	None
Contact:	FHWA (refer to List of Contacts)

Name of Funding Program:	Schools and Roads Grants to States
Funding Type:	Federal
Summary Description:	Funds are used for public roads and schools that are located in the same county as a National Forest. The program's intention is to maintain county roads which lead to Forest Service roads.
Eligible Applicants:	Cities and counties containing National Forest Land.
Typical Funding Amounts:	Formula grants are 25% of the receipts collected from timber and land use fees to the respective counties. Fifty percent of these funds are used for roads.
Required Matching Funds:	No match required.
Procedure for Project Review and Selection:	Applicants must contact local governments. Local governments disburse the funds for projects.
Schedule for Application Availability, Due Date, and Selection Date:	Application deadline is annually in spring.
Contact:	Public Affairs Office United States Forest Service Department (refer to List of Contacts)

Name of Funding Program:	Local Transportation Fund (LTF), TDA Article 3
Funding Type:	State
Summary Description:	TDA funds transportation improvements. One quarter cent of retail sales tax is returned to the county of origin. Each county is to receive one quarter of a cent of 7 1/4 cents of retail sales tax collected statewide. Up to two percent of funds can be set aside for pedestrian and bicycle facilities, and five percent can be spent for supplementing other funds to implement bicycle safety education programs.
Eligible Applicants:	Local jurisdictions.
Typical Funding Amounts:	\$40,000 annually county-wide.
Required Matching Funds:	No matching funds are required.
Procedure for Project Review and Selection:	Local agencies submit applications for projects to the local CTC or SACOG. Each CTC or SACOG has policies regarding the provision of LTF funds for non-motorized transportation projects.
Schedule for Application Availability, Due Date, and Selection Date:	Applications are due in January.
Contact:	SACOG (refer to List of Contacts)

Name of Funding Program:	California Bikeway Transportation Act (BTA)
Funding Type:	State
Summary Description:	The purpose of the BTA is to improve the safety and convenience of bicycling for utilitarian reasons. BTA funds are available for jurisdictions with approved bicycle transportation plans. No agency may receive more than 25% of the total funds appropriated. Eligible projects include new bikeways that serve major transportation corridors, and that remove travel barriers, bicycle parking at transit stations, park-n-ride lots and employment centers, bicycles on transit vehicles, installation of traffic control devices, planning, safety and education, and elimination of road hazards on existing bikeways. Priority projects serve bicycle commuters, have activity centers at each end point, are consistent with the bicycle plan/program, and close missing links. Projects must be consistent with local Bikeway Plans, the RTP and incorporated into the RTIP if projects are regionally significant.
Eligible Applicants:	Cities and counties with approved bicycle plans.
Typical Funding Amounts:	\$700,000 FY 98-99, \$2 million 01-02, \$3 million 03, \$5 million per annum for the remaining years, as authorized by SB 1771 - Brulte.
Required Matching Funds:	A local match of 10% is required.
Procedure for Project Review and Selection:	Projects must be included in a locally approved Bike Plan. Projects are reviewed and approved by the local CTC or SACOG before they are submitted to the appropriate Caltrans Local Streets and Roads program for prioritization. Caltrans develops statewide priority project listing for funding.
Schedule for Application Availability, Due Date, and Selection Date:	Proposals are due December 1st. Caltrans prioritizes and selects projects in February.
Contact:	Caltrans District Office, Caltrans Office of Bicycle Facilities (refer to List of Contacts)

Name of Funding Program: **Environmental Enhancement and Mitigation Program**

Funding Type: State

Summary Description: Funds are allocated to projects that offset environmental impacts of modified or new public transportation facilities including streets, mass transit guideways, park-n-ride facilities, transit stations, tree planting to equalize the effects of vehicular emissions, and the acquisition or development of roadside recreational facilities, such as trails.

Eligible Applicants: Non-profit, local, state, and federal agencies.

Typical Funding Amounts: The program is funded at \$10 million per year for 10 years, a \$500,000 cap on individual projects is set.

Required Matching Funds: No match required.

Procedure for Project Review and Selection: Eligible agencies apply to the State Resources Agency. The Resource Agency will recommend projects for funding and give a list of selected projects to the California Transportation Commission, which makes the final project selection.

Schedule for Application Availability, Due Date, and Selection Date: Applications are due November, recommendations are made to the CTC in April, project approvals are made in July.

Contact: State of California Resources Agency
(refer to List of Contacts)

Name of Funding Program: **Flexible Congestion Relief (FCR) Program**

Funding Type: State

Summary Description: This program is designed to reduce congestion on major transportation corridors by adding capacity to either roadways or urban rail transit systems. Projects include lane additions, park-n-ride facilities, guideway stations parking facilities, multi-modal guideway passenger stations, and bicycle lanes. Projects must be consistent with the Regional Transportation Plan and must be included in the RTIP, particularly, the county's Congestion Management Program (CMP).

Eligible Applicants: Cities, counties, transit operators, Caltrans, and other state and federal agencies.

Typical Funding Amounts: Approximately \$300 million annually state-wide.

Required Matching Funds: No match required.

Procedure for Project Review and Selection: Eligible agencies submit desired projects to their respective Congestion Management Agency (CMA). Each CMA recommends a prioritized list of FCR projects to be included in the RTIP.

Schedule for Application Availability, Due Date, and Selection Date: Proposals are submitted to the California Transportation Commission on December 1 of odd-numbered years. The Commission adopts the State Transportation Improvement Plan on April 1 of even-numbered years.

Contact: SACOG
(refer to List of Contacts)

Name of Funding Program:	Habitat Conservation Fund Grant Program
Funding Type:	State
Summary Description:	This program originates from the California Wildlife Protection Act of 1990 (Prop 117). Eligible projects include the acquisition of various types of wildlife habitats, enhancement and restoration of various wildlife habitats, trails, and programs which attract recreationalists to park and wildlife areas and that educate them about the State's resources. Projects must be incorporated into the RTIP if they are regionally significant.
Eligible Applicants:	Cities, counties, and special districts.
Typical Funding Amounts:	
Required Matching Funds:	A local match of 50% is required. The local match can not be a state source.
Procedure for Project Review and Selection:	Eligible agencies submit applications to the State Department of Parks and Recreation (DPR). DPR selects and presents eligible applications to the California State Legislature for funding approval in the State budget.
Schedule for Application Availability, Due Date, and Selection Date:	The application deadline is October.
Contact:	State Department of Parks and Recreation (refer to List of Contacts)

Name of Funding Program:	Kapiloff Land Bank Funds
Funding Type:	State
Summary Description:	The State Lands Commission purchases land for restoration, enhancement and protection through Land Bank funds or land exchange. If approved by the legislature, State lease revenue is available to fund projects. The funds originate from land boundary settlements with the State. Generally, the project must be in the same area that the funds originate. For acquisition of public access land and other resources, including trails.
Eligible Applicants:	Private landowners.
Typical Funding Amounts:	
Required Matching Funds:	No match required.
Procedure for Project Review and Selection:	Eligible landowners submit proposals. The State Lands commission reviews and approves proposals.
Schedule for Application Availability, Due Date, and Selection Date:	Open filing period.
Contact:	State Lands Commission (refer to List of Contacts)

Name of Funding Program:	Land and Water Conservation Fund
Funding Type:	State
Summary Description:	This program provides grants to plan, acquire, and develop recreational parks and facilities, especially in urban areas. Funds are based on a State Comprehensive Outdoor Recreation Plan, and limited to outdoor recreational projects. The most comprehensive projects are the acquisition of wetland habitat, the development of pedestrian and bicycle trails, and picnic, camping, and swimming facilities. Projects must be incorporated into the RTIP if they are regionally significant.
Eligible Applicants:	Cities, counties, park and recreation departments, special districts with park and recreation areas, State Department of Parks and Recreation, Wildlife Conservation Board, Department of Water Resources, and Department of Boating and Waterways.
Typical Funding Amounts:	
Required Matching Funds:	50% is reimbursed to eligible agencies.
Procedure for Project Review and Selection:	The State Department of Parks and Recreation (DPR) administers the funds. Eligible applicants submit applications to State DPR. After an initial screening, projects are ranked according to a set of criteria, including the statewide outdoor recreation needs (bicycling is considered one of the highest needs).
Schedule for Application Availability, Due Date, and Selection Date:	The application deadline is December.
Contact:	State Department of Parks and Recreation (refer to List of Contacts)

Name of Funding Program:	Mello-Roos Community Facilities District Act
Funding Type:	State
Summary Description:	Sponsoring agencies may issue a special tax bond for a community facilities district to finance public facilities and services. Facilities include local parks, recreation, parkway and open space facilities, and pedestrian and bicycle facilities. Services include recreational programs, and the operation and maintenance of parkways, parks and open space. Projects funded with Mello-Roos funds must be incorporated into RTIP, if projects are regionally significant.
Eligible Applicants:	Cities, counties, special districts, other municipal corporations or districts.
Typical Funding Amounts:	
Required Matching Funds:	No match required.
Procedure for Project Review and Selection:	After public notice and hearing, the voters within the proposed district must vote by a two thirds majority for the Community Facilities District and for a maximum tax rate.
Schedule for Application Availability, Due Date, and Selection Date:	Depends on the Mello-Roos District agreements.
Contact:	Local jurisdiction.
Name of Funding Program:	Congestion Mitigation and Air Quality Improvement Program (CMAQ) (Section 1110)
Funding Type:	Federal
Summary Description:	CMAQ funds are available for projects that will help attain National Ambient Air Quality Standards (NAAQS) identified in the 1990 federal Clean Air Act Amendments. Projects must come from jurisdictions in non-attainment areas. Eligible projects include bicycle and pedestrian facilities intended for transportation purposes, bicycle route maps, bike activated traffic control devices, bicycle safety

	and education programs, and bicycle promotional programs.
Eligible Applicants:	Cities, counties, transit operators, Caltrans and MPOs. Non-profit organizations and Special districts may also apply with sponsorship from an eligible agency.
Typical Funding Amounts:	Approximately \$8.1 billion nationwide over the six years of T-21.
Required Matching Funds:	A local or state match of 20% is required.
Procedure for Project Review and Selection:	Initiated projects must gain support of local government. Local government submits projects to SACOG for review and prioritization for inclusion in the RTIP. Allocations are then made on the basis of priorities developed by the RTP and local CTC funding policies.
Schedule for Application	Based on a multi-year project selection process, the dates are pending.
Availability, Due Date; and Selection Date:	
Key Changes in TEA-21:	A small percentage of this increased funding can be transferred. (Section 1310)
Contact:	SACOG (refer to List of Contacts)

Commuter Funding Summary

List of Contacts

Caltrans
Office of Transportation Enhancement
Activities
1120 N Street
Sacramento, CA 95814
(916) 654-5275
Contact: Marsha Mason

Caltrans
Division of State and Local Project
Development
Office of Local Programs
P.O. Box 942874
Sacramento, CA 94274-0001
(916) 653-8220
Contact: Mel Aros

California Department of Transportation
Division of Planning
1120 N Street
P.O. Box 942873
Sacramento, CA 95814
(916) 324-6514
Contact: Donna Long

State Lands Commission
1807 13th Street
Sacramento, CA 95814
(916) 322-5645
Contact: Mary Howe

State of California Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814
(916) 653-9709
Contact: Hal Waraas

Federal Highway Administration
Intermodal Division, Hep-50
400 Seventh Street, S.W., Room 3222
Washington, DC 20590

Caltrans Division of Structures
Local Assistance and Programming Branch
1801 30th Street
Sacramento, CA 95816
(916) 227-8023
Contact: Gene Cowley

State Department of Parks and Recreation
P.O. Box 942896
Sacramento, CA 94296-0001
(916) 653-8803
Contact: Charlie Willard

Office of Traffic Safety
7000 Franklin Boulevard, Suite 440
Sacramento, CA 95823
(916) 445-0527
Contact: Arthur L. Anderson, Director

Public Affairs Office
United States Forest Service Department
630 Sansome Street
San Francisco, CA 94111
(415) 705-2703
Contact: Denise Mills-Ford

(202) 366-5007
Contact: John C. Fegan

Caltrans District Office,
Caltrans Office of Bicycle Facilities
PO Box 94274
Sacramento, CA 94274-0001
(916) 653-0036
Contact: Richard L. Blunden, Chief

Sacramento Area Council of Governments
3000 S Street,
Sacramento, CA 95816
(916) 457-2264
Contact: Doug Reed

APPENDIX E

APPENDIX E

Bibliography

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APPENDIX E

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APPENDIX F

Goals and Policies from Relevant Plans and Studies

APPENDIX F

Policies and Standards in Relevant Planning Documents

The following section provides paraphrased excerpts of policy and design documents from various plans and studies pertinent to the City of Lincoln. The purpose of presenting this information is to provide a synopsis of the existing and/or proposed policies and standards that will relate to the City of Lincoln Bikeway Master Plan. Policies and standards relating specifically to implementation and design of the proposed bikeway system will be presented in the Goals and Policy section.

Placer County Bikeway Master Plan – Administrative Draft – August 2000

The following county goals and policies are relevant to the development of the City of Lincoln Bikeway Master Plan.

Overall Goal – To promote safe, convenient, and enjoyable cycling by establishing a comprehensive system of bikeways that link the communities of Placer County.

Policy: Implement the bikeway network by working closely with Placer County jurisdictions and bicycle advisory committees.

Policy: Work with the County and cities to incorporate state-of-the-art bicycle design guidelines into their overall policies for roadway and interchange design.

Policy: Encourage all Placer County jurisdictions, including Municipal Advisory Committees, to include bikeways in their planning efforts.

Policy: Develop an ongoing funding source for maintenance of bikeways.

Policy: Encourage jurisdictions to apply for all possible sources of funding including Safe Routes to Schools, Congestion Mitigation and Air Quality (CMAQ), Transportation Development Act, and State bicycle Transportation Account.

City of Lincoln Amended Public Facilities Element, October 1998

The following goals and policies relate to Transportation System Management and Parks, Open Spaces and Recreational Facilities within the Public Facilities element.

Goal: See a 35 percent reduction in trips generated by new employment (Transportation System Management).

Policy 5-14 – Provide pedestrian/bicycle crossings at appropriate intervals along new roadways that will adequately serve new large-scale commercial office, industrial development, and residential development.

Goal: Continue to ensure provision of adequate park, open space, and recreational facilities to meet the varied needs of City residents (Parks, Open Space, and Recreational Facilities).

Policy 9-5 – Strive to provide one mile of pedestrian/bicycle trails per 2,500 population.

City of Lincoln General Plan, September 1988

The General Plan provides for the following under Section 3. Circulation and Transit Goals and Policies:

Goal: To provide and maintain a safe and efficient system of streets, highways, and public transportation to meet community needs and promote sound land use.

Policy 3 – To require bike lanes in the design and construction of major new street and highway improvements, and to establish bike lanes on those city streets wide enough to accommodate bicycles safely.

Policy 13 – To promote and support the development of regional bikeway links as established in the Placer County Bikeway Master Plan.

Final Lincoln Crossing Specific Plan – April 1992

Section 3.2.2 General commercial and Business/Professional Policies

Policy 5 – Pedestrian and bicycle access to commercial areas shall be facilitated by the creation of sidewalks, pedestrian/bicycle paths and bicycle parking facilities.

Section 3.2.3 Circulation Policies

Policy 5 – All streetscape on public and private streets, including sidewalks, pedestrian paths, bicycle lanes and landscaping, shall be designed and constructed in accordance with the Circulation Element of this Plan and the Design Guidelines which accompany this plan.

Policy 11 – Pedestrian and bicycle paths shall be located adjacent to arterial and collector street rights-of-way and in Nature Preserve Areas. Public access rights shall be guaranteed in all instances.

Section 3.2.6 Public Facilities and Services Policy

Policy 4 – Pedestrian and bicycle paths shall be provided to link schools and parks with adjoining residential villages.

Policy 7 – Pedestrian and bicycle paths and sidewalks shall be provided to all public schools.

Design Guidelines for the Three D Property, September 1995

The following general guidelines outline the typical elements to be followed in development of Streetscape Designs.

Section 3.2 Primary Residential Streets – Primary residential streets provide a transition roadway between minor residential surface streets and local collector streets such as Moore Road. They occupy a 50-foot wide right-of-way and provide a 12-foot wide travel lane, 6-foot parking/bicycle lane, 3 foot rolled curb and gutter and 4-foot sidewalk on each side of the street. A twelve and one half foot wide easement for public utilities and maintenance extends from the back of sidewalks onto each lot.

Notice of Preparation and Initial Study for Foskett Ranch, December 1999

The following objective will guide development of the proposed project.

Objective 7 – Make walking and bicycle opportunities appealing alternative to driving, thereby reducing automobile trips and their impacts.

General Development Plan and Zoning Regulation for the Sterling Pointe Specific Plan,
June 1999

The specific plan provides mandatory design elements that must be embodied in all projects proposed within the Sterling Pointe Plan area.

Pedestrian Areas – Bicycling shall be encouraged through the provision of bicycle parking areas near building entrances. Bicycle parking facilities shall be secure and fully integrated into the overall site and architectural design.

Draft Initial Study and Notice of Intent to Adopt a Mitigated Negative Declaration for the
Nicolaus Road Bicycle Path, July 2000

Project Objective – The Nicolaus Road Bicycle Path is a planned improvement in the City of Lincoln General Plan and Public Facilities Element (PFE). The City intends to incrementally develop bicycle facilities within the existing city area as part of individual projects. Nicolaus Road was envisioned to include a Class III bicycle route from downtown Lincoln to Joiner Parkway and a Class I bicycle path from Joiner Parkway west. The proposed project is part of a safe and convenient bicycle system within the City of Lincoln that provides a direct link between the residential and commercial areas west of Lakeside Drive to the Lincoln downtown area. As a Class I Bicycle path, the project would provide a separated facility that would increase safety for pedestrians and bicyclists along Nicolaus Road.

APPENDIX G

Population Densities

Unincorporated / Census Tracts / Current Estimates / Data Incorporated / Projections /
 Incorporated

Population Estimates & Housing Unit Inventory

County & City Data / Incorporated Cities / Metropolitan / CSD Data

El Dorado County / El Paso County / Sacramento County / Tulare County / Yuba County /
 Yuba County

Placer County

Year	Population			Housing				
	Total	Incorporated	Uninc.	Total	2-4	5+ Mobile		
1990	231,668	231,753	2,928	103,758	51,464	5,025	18,728	1,358
1995	237,961	234,872	3,088	100,792	50,967	5,055	18,437	1,395
1998	239,887	234,772	1,658	97,738	47,682	4,994	18,029	1,397
1997	237,495	236,168	26,91	94,413	49,342	4,957	17,983	1,231
1996	236,707	235,689	2,611	91,373	47,827	4,993	17,449	1,216
1995	198,600	195,941	2,598	88,176	46,038	4,917	17,283	1,181
1994	198,196	191,233	3,567	86,947	46,257	4,905	17,092	1,131
1993	189,100	189,598	2,308	85,127	46,039	4,897	17,038	1,112
1992	184,786	184,758	2,397	81,873	45,992	4,868	16,718	1,092
1991	179,493	179,029	2,371	78,788	45,997	4,842	16,589	1,094
1990	178,136	187,758	2,349	75,787	46,635	4,810	16,093	1,057

Butte County

Year	Population			Housing				
	Total	Incorporated	Uninc.	Total	2-4	5+ Mobile		
2000	11,487	11,446	120	5,781	3,295	417	1,068	8
1999	11,707	11,460	220	5,938	3,298	417	1,063	8
1998	11,699	11,448	230	5,299	3,471	407	1,058	8
1997	11,739	11,333	393	5,362	3,437	413	1,053	8
1996	11,699	11,277	318	5,211	3,395	415	1,045	8
1995	11,158	10,586	264	5,188	3,382	417	1,035	8
1994	11,338	11,088	264	5,178	3,392	413	1,037	8
1993	11,180	10,892	268	5,077	3,437	417	1,030	8
1992	11,096	10,843	268	5,047	3,415	417	1,030	8
1991	10,948	10,843	365	4,918	3,397	413	1,030	8



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Placer County

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	234,400	231,772	2,628	105,578	84,468	5,026	10,728	5,356
1999	227,500	224,872	2,628	100,792	80,995	5,008	9,457	5,332
1998	219,400	216,772	2,628	97,120	77,800	4,994	9,029	5,297
1997	212,400	209,769	26,31	94,435	75,245	4,994	8,945	5,251
1996	206,300	203,689	2,611	91,871	72,821	4,991	8,849	5,210
1995	199,600	197,045	2,555	89,379	70,534	4,911	8,753	5,181
1994	194,100	191,533	2,567	86,938	68,255	4,900	8,632	5,151
1993	189,400	186,840	2,560	85,127	66,559	4,897	8,559	5,112
1992	184,100	181,705	2,395	82,811	64,942	4,869	7,938	5,062
1991	178,400	176,029	2,371	80,188	62,981	4,848	7,360	4,999
1990	170,100	167,756	2,344	75,397	59,956	4,819	5,695	4,927

Auburn

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	11,400	11,180	220	5,383	3,753	617	1,005	8
1999	11,700	11,480	220	5,336	3,706	617	1,005	8
1998	11,650	11,430	220	5,299	3,671	615	1,005	8
1997	11,550	11,333	217	5,265	3,637	615	1,005	8
1996	11,450	11,237	213	5,211	3,583	615	1,005	8
1995	11,150	10,946	204	5,160	3,532	615	1,005	8
1994	11,250	11,046	204	5,128	3,502	613	1,005	8
1993	11,100	10,895	205	5,077	3,451	613	1,005	8
1992	11,050	10,845	205	5,041	3,415	613	1,005	8
1991	10,900	10,695	205	4,919	3,293	613	1,005	8

1990	10,500	10,295	205	4,761	3,135	613	1,005	8
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Colfax

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	1,500	1,500	0	738	465	143	75	55
1999	1,510	1,510	0	708	453	143	75	37
1998	1,480	1,480	0	690	435	143	75	37
1997	1,470	1,470	0	686	431	143	75	37
1996	1,450	1,450	0	676	421	143	75	37
1995	1,430	1,430	0	668	413	143	75	37
1994	1,380	1,380	0	665	410	143	75	37
1993	1,370	1,370	0	661	409	140	75	37
1992	1,370	1,370	0	653	403	138	75	37
1991	1,340	1,340	0	636	398	126	75	37
1990	1,300	1,300	0	615	398	110	70	37

Lincoln

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	9,675	9,582	93	3,909	2,922	231	682	74
1999	8,825	8,732	93	3,414	2,427	231	682	74
1998	8,300	8,207	93	3,173	2,306	231	562	74
1997	8,200	8,106	94	3,109	2,244	231	562	72
1996	7,975	7,881	94	2,979	2,203	231	474	71
1995	7,800	7,706	94	2,937	2,160	231	474	72
1994	7,750	7,656	94	2,893	2,116	231	474	72
1993	7,675	7,581	94	2,863	2,086	231	474	72
1992	7,675	7,581	94	2,844	2,067	231	474	72
1991	7,450	7,356	94	2,755	1,978	231	474	72
1990	7,125	7,031	94	2,623	1,846	231	474	72

Loomis

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	5,925	5,870	55	2,226	1,996	95	15	120
1999	6,050	5,995	55	2,204	1,976	95	15	118
1998	6,075	6,020	55	2,187	1,961	95	15	116
1997	6,050	5,995	55	2,185	1,957	95	15	118
1996	6,025	5,970	55	2,176	1,948	95	15	118
1995	5,950	5,895	55	2,170	1,943	95	15	117
1994	5,950	5,895	55	2,141	1,915	95	15	116
1993	5,850	5,795	55	2,110	1,885	95	15	115
1992	5,800	5,745	55	2,085	1,860	95	15	115
1991	5,725	5,670	55	2,036	1,813	95	15	113
1990	5,650	5,595	55	2,021	1,798	95	15	113

Rocklin

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	35,250	35,250	0	13,361	10,162	482	2,251	466
1999	31,950	31,950	0	11,680	9,320	466	1,428	466
1998	29,450	29,450	0	10,955	8,611	466	1,412	466
1997	28,000	28,000	0	10,384	8,119	466	1,333	466
1996	26,950	26,950	0	10,030	7,775	466	1,325	464
1995	25,850	25,850	0	9,694	7,502	442	1,285	465
1994	24,800	24,800	0	9,120	6,967	442	1,245	466
1993	23,250	23,250	0	8,579	6,427	442	1,245	465
1992	22,650	22,650	0	8,185	6,038	442	1,245	460
1991	21,400	21,400	0	7,730	5,587	442	1,245	456
1990	18,150	18,150	0	6,623	4,908	442	821	452

Roseville

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	74,200	73,410	790	31,560	24,116	1,473	5,446	525
1999	72,100	71,310	790	29,574	22,578	1,473	4,998	525
1998	67,300	66,510	790	27,438	20,744	1,463	4,706	525
1997	63,500	62,706	794	25,914	19,224	1,463	4,706	521
1996	59,800	59,022	778	24,388	17,699	1,463	4,706	520
1995	56,500	55,718	782	22,964	16,333	1,463	4,650	518
1994	54,400	53,615	785	21,875	15,276	1,457	4,626	516
1993	52,500	51,693	807	21,263	14,743	1,457	4,553	510
1992	49,500	48,767	733	20,066	14,198	1,431	3,937	500

1991	46,700	45,986	714	19,015	13,740	1,431	3,359	485
1990	43,900	43,198	702	16,629	12,539	1,431	2,188	471

Unincorporated

As of Jan. 1	Population			Housing				
	Total	Household	Grp Qtrs	Total	Sgl Fam	2 - 4	5 +	Mobile
2000	96,450	94,980	1,470	48,401	41,054	1,985	1,254	4,108
1999	95,365	93,895	1,470	47,876	40,535	1,983	1,254	4,104
1998	95,145	93,675	1,470	47,378	40,072	1,981	1,254	4,071
1997	93,630	92,159	1,471	46,892	39,633	1,981	1,249	4,029
1996	92,650	91,179	1,471	46,411	39,192	1,978	1,249	3,992
1995	90,920	89,500	1,420	45,786	38,651	1,922	1,249	3,964
1994	88,570	87,141	1,429	45,116	38,069	1,919	1,192	3,936
1993	87,655	86,256	1,399	44,574	37,558	1,919	1,192	3,905
1992	86,055	84,747	1,308	43,937	36,961	1,919	1,187	3,870
1991	84,885	83,582	1,303	43,097	36,172	1,910	1,187	3,828
1990	83,475	82,187	1,288	42,125	35,332	1,897	1,122	3,774

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